Vincotech

B0-SL10NIA300S704-LS78F98Z
datasheet

***flow*NPC S3** **950 V / 300 A**

Topology features

- Kelvin Emitter for improved switching performance
- Temperature sensor
- Neutral Point Clamped Topology (I-Type)

Component features

- Low collector emitter saturation voltage
- High speed and smooth switching

Housing features

- Base isolation: Al_2O_3
- CTI600 housing material
- Compact, baseplate-less housing
- VINcoPress Technology
- Thermo-mechanical push-and-pull force relief
- Solder pin

Target applications

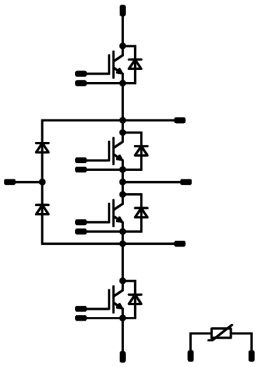
- Solar Inverters

Types

- B0-SL10NIA300S704-LS78F98Z

flow S3 12 mm housing

Schematic



Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions	Value	Unit
Buck Switch				
Collector-emitter voltage	V_{CES}		950	V
Collector current (DC current)	I_C	T_j = T_{jmax} T_s = 80 °C	196	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	600	A
Total power dissipation	P_{tot}	T_j = T_{jmax} T_s = 80 °C	393	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum junction temperature	T_{jmax}		175	°C
Buck Diode				
Peak repetitive reverse voltage	V_{RRM}		950	V
Forward current (DC current)	I_F	T_j = T_{jmax} T_s = 80 °C	101	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	400	A
Total power dissipation	P_{tot}	T_j = T_{jmax} T_s = 80 °C	177	W
Maximum junction temperature	T_{jmax}		175	°C
Boost Switch				
Collector-emitter voltage	V_{CES}		950	V
Collector current (DC current)	I_C	T_j = T_{jmax} T_s = 80 °C	148	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	400	A
Total power dissipation	P_{tot}	T_j = T_{jmax} T_s = 80 °C	283	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum junction temperature	T_{jmax}		175	°C

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions	Value	Unit
Boost Diode				
Peak repetitive reverse voltage	V_{RRM}		950	V
Forward current (DC current)	I_F	T_j = T_{jmax} T_s = 80 °C	101	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	400	A
Total power dissipation	P_{tot}	T_j = T_{jmax} T_s = 80 °C	177	W
Maximum junction temperature	T_{jmax}		175	°C
Boost Sw. Inv. Diode				
Peak repetitive reverse voltage	V_{RRM}		950	V
Forward current (DC current)	I_F	T_j = T_{jmax} T_s = 80 °C	101	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	400	A
Total power dissipation	P_{tot}	T_j = T_{jmax} T_s = 80 °C	177	W
Maximum junction temperature	T_{jmax}		175	°C
Module Properties				
Thermal Properties				
Storage temperature	T_{stg}		-40…+125	°C
Operation temperature under switching condition	T_{jop}		-40…+(T_{jmax} - 25)	°C
Isolation Properties				
Isolation voltage	V_{isol}	DC Test Voltage* t_p = 2 s	6800	V
Creepage distance			11,65	mm
Clearance			10,18	mm
Comparative Tracking Index	CTI		≥ 600	

*100 % tested in production

Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Min	Typ	Max	
Buck Switch										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	V_{CE} = V_{GE}			0,00501	25	4,35	5,1	5,85	V
Collector-emitter saturation voltage	V_{CEsat}		15		300	25 125 150		1,9 2,23 2,31	2,35(1)	V
Collector-emitter cut-off current	I_{CES}		0	950		25			6	µA
Gate-emitter leakage current	I_{GES}		20	0		25			300	nA
Internal gate resistance	r_g							0,5		Ω
Input capacitance	C_{ies}	f = 100 kHz	0	25		25		19500		pF
Output capacitance	C_{oes}							417		pF
Reverse transfer capacitance	C_{res}							60		pF
Gate charge	Q_g		±15		0	25		690		nC
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,24		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	200	25 125 150		214,4 214,4 214,72		ns
Rise time	t_r					25 125 150		24,64 26,88 27,52		ns
Turn-off delay time	$t_{d(off)}$					25 125 150		170,88 203,84 212,8		ns
Fall time	t_f					25 125 150		26,29 50,25 61,85		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=5,72 µC Q_{rFWD}=12 µC Q_{rFWD}=14 µC				25 125 150		7,73 8,96 9,14		mWs
Turn-off energy (per pulse)	E_{off}					25 125 150		6,02 10,13 11,42		mWs

Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Min	Typ	Max	
Buck Diode										
Static										
Forward voltage	V_F				200	25 125 150	2,1	2,64 2,44 2,36	2,8[1]	V
Reverse leakage current	I_R	V_r = 950 V				25			8	µA
Thermal										
Thermal resistance junction to sink[2]	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,54		K/W
Dynamic										
Peak recovery current	I_{RM}	di/dt=6992 A/µs di/dt=6819 A/µs di/dt=6814 A/µs	±15	600	200	25 125 150		131,6 188,79 203,87		A
Reverse recovery time	t_{rr}					25 125 150		130,35 171,25 185,89		ns
Recovered charge	Q_r					25 125 150		5,72 12 14		µC
Reverse recovered energy	E_{rec}					25 125 150		1,95 4,34 5,18		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125 150		6440 5535 5499		A/µs

Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Min	Typ	Max	
Boost Switch										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	V_{CE} = V_{GE}			0,00334	25	4,35	5,1	5,85	V
Collector-emitter saturation voltage	V_{CEsat}		15		200	25 125 150		1,83 2,06 2,11	2,35(1)	V
Collector-emitter cut-off current	I_{CES}		0	950		25			4	µA
Gate-emitter leakage current	I_{GES}		20	0		25			200	nA
Internal gate resistance	r_g							0,75		Ω
Input capacitance	C_{ies}	f = 100 kHz	0	25		25		13000		pF
Output capacitance	C_{oes}							278		pF
Reverse transfer capacitance	C_{res}							40		pF
Gate charge	Q_g		±15		0	25		460		nC
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,34		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	200	25 125 150		154,24 155,2 156,16		ns
Rise time	t_r					25 125 150		23,04 26,24 26,24		ns
Turn-off delay time	$t_{d(off)}$					25 125 150		125,12 147,84 153,92		ns
Fall time	t_f					25 125 150		29,93 54,38 65,41		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=5,52 µC Q_{rFWD}=11,68 µC Q_{rFWD}=14,09 µC				25 125 150		7,44 8,33 8,57		mWs
Turn-off energy (per pulse)	E_{off}					25 125 150		5,56 9,29 10,33		mWs

Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Min	Typ	Max	
Boost Diode										
Static										
Forward voltage	V_F				200	25 125 150	2,1	2,64 2,44 2,36	2,8[1]	V
Reverse leakage current	I_R	V_r = 950 V				25			8	µA
Thermal										
Thermal resistance junction to sink[2]	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,54		K/W
Dynamic										
Peak recovery current	I_{RM}	di/dt=6438 A/µs di/dt=6133 A/µs di/dt=6024 A/µs	±15	600	200	25 125 150		107,62 158,66 175,89		A
Reverse recovery time	t_{rr}					25 125 150		141,68 186,21 204,13		ns
Recovered charge	Q_r					25 125 150		5,52 11,68 14,09		µC
Reverse recovered energy	E_{rec}					25 125 150		1,76 3,88 4,78		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125 150		4525 3268 3188		A/µs

Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Min	Typ	Max	
Boost Sw. Inv. Diode										
Static										
Forward voltage	V_F				200	25 125 150	2,1	2,64 2,44 2,36	2,8[1]	V
Reverse leakage current	I_R	V_r = 950 V				25			8	µA
Thermal										
Thermal resistance junction to sink[2]	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,54		K/W
Thermistor										
Static										
Rated resistance	R					25		22		kΩ
Deviation of R100	$\Delta_{R/R}$	R_{100} = 1484 Ω				100	-5		5	%
Power dissipation	P					25		130		mW
Power dissipation constant	d					25		1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ±1 %						3962		K
B-value	$B_{(25/100)}$	Tol. ±1 %						4000		K
Vincotech Thermistor Reference									I	

[1] Value at chip level

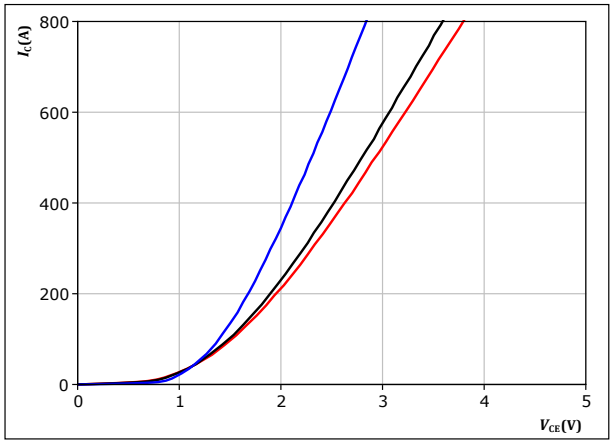
[2] Only valid with pre-applied Vincotech thermal interface material.

Buck Switch Characteristics

figure 1. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$

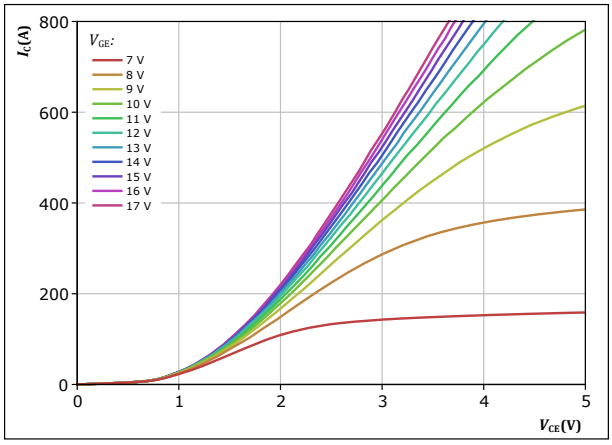


t_p =	250	µs		
V_{GE} =	15	V	T_j:	25 °C
				125 °C
				150 °C

figure 2. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$



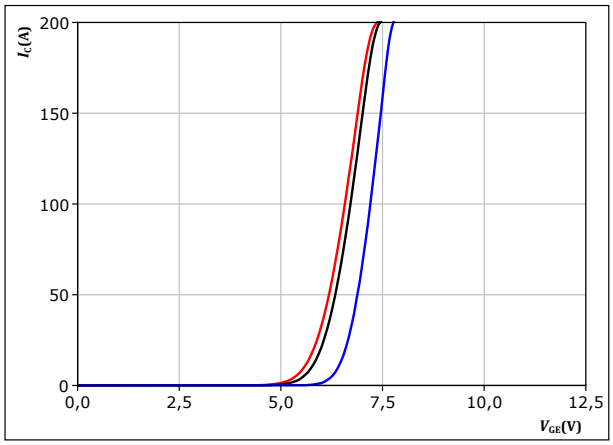
t_p =	250	µs
T_j =	150	°C

V_{GE} from 7 V to 17 V in steps of 1 V

figure 3. **IGBT**

Typical transfer characteristics

$I_C = f(V_{GE})$

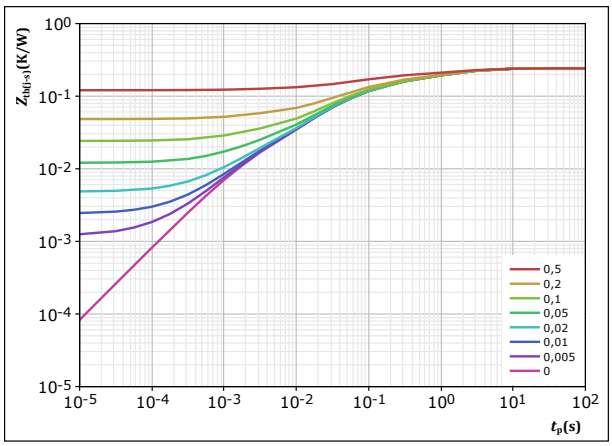


t_p =	250	µs		
V_{CE} =	18	V	T_j:	25 °C
				125 °C
				150 °C

figure 4. **IGBT**

Transient thermal impedance as a function of pulse width

$Z_{th(j-s)} = f(t_p)$



D =	t_p / T	
$R_{th(j-s)}$ =	0,242	K/W

IGBT thermal model values

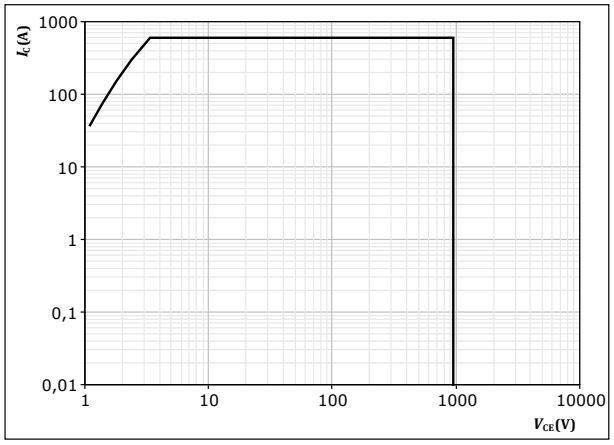
R (K/W)	τ (s)
2,73E-02	4,22E+00
6,54E-02	1,10E+00
7,62E-02	1,31E-01
6,25E-02	2,86E-02
1,02E-02	1,84E-03

Buck Switch Characteristics

figure 5. **IGBT**

Safe operating area

$I_C = f(V_{CE})$



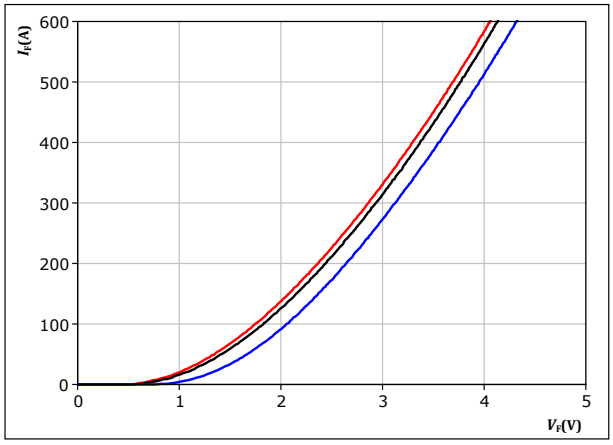
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

Buck Diode Characteristics

figure 6. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



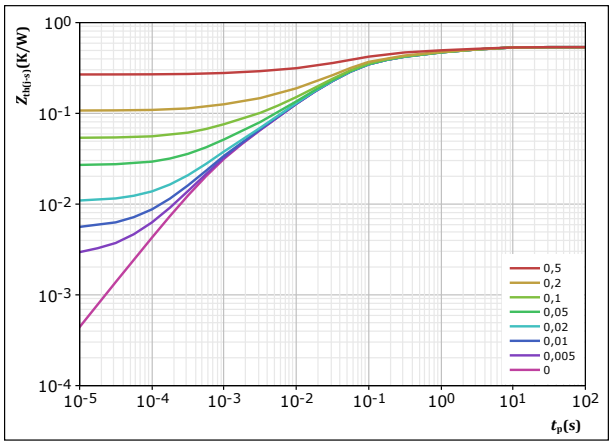
t_p = 250 µs

T_j: 25 °C, 125 °C, 150 °C

figure 7. **FWD**

Transient thermal impedance as a function of pulse width

$Z_{th(j-s)} = f(t_p)$



D = t_p / T

$R_{th(j-s)}$ = 0,536 K/W

FWD thermal model values

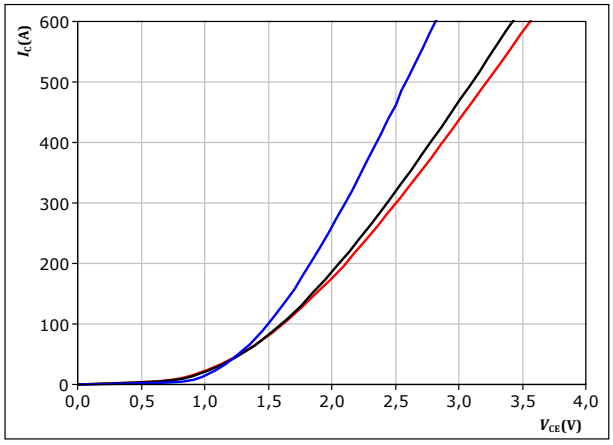
R (K/W)	τ (s)
7,69E-02	3,35E+00
9,02E-02	4,45E-01
2,58E-01	5,60E-02
8,45E-02	9,21E-03
2,68E-02	8,82E-04

Boost Switch Characteristics

figure 8. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$

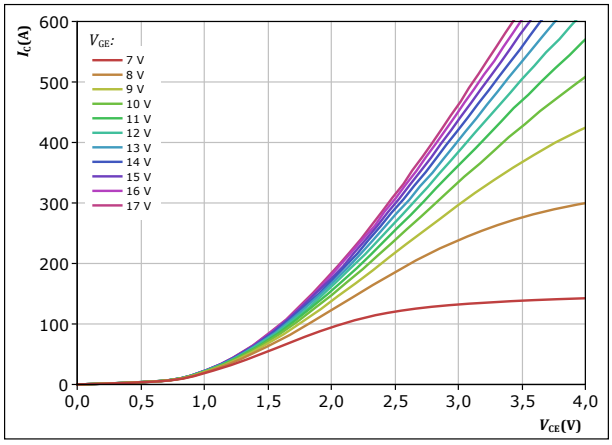


t_p =	250	µs		
V_{GE} =	15	V	T_j:	25 °C
				125 °C
				150 °C

figure 9. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$



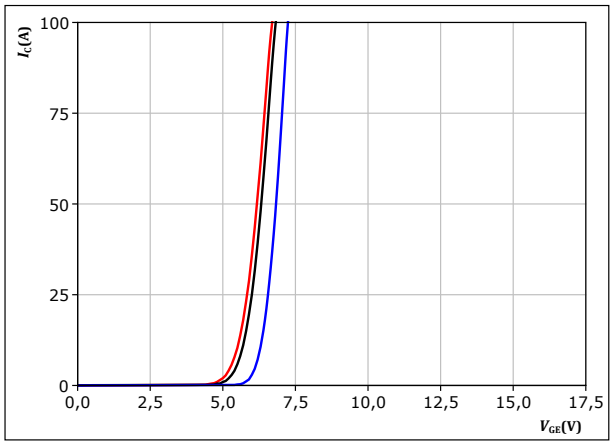
t_p =	250	µs
T_j =	150	°C

V_{GE} from 7 V to 17 V in steps of 1 V

figure 10. **IGBT**

Typical transfer characteristics

$I_C = f(V_{GE})$

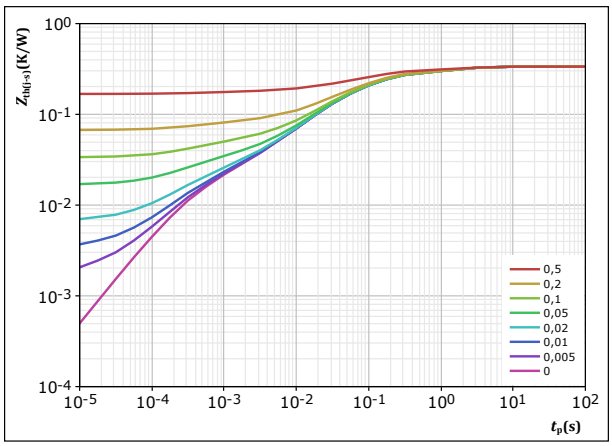


t_p =	250	µs		
V_{CE} =	8	V	T_j:	25 °C
				125 °C
				150 °C

figure 11. **IGBT**

Transient thermal impedance as a function of pulse width

$Z_{th(j-s)} = f(t_p)$



D =	t_p / T	
$R_{th(j-s)}$ =	0,336	K/W

IGBT thermal model values

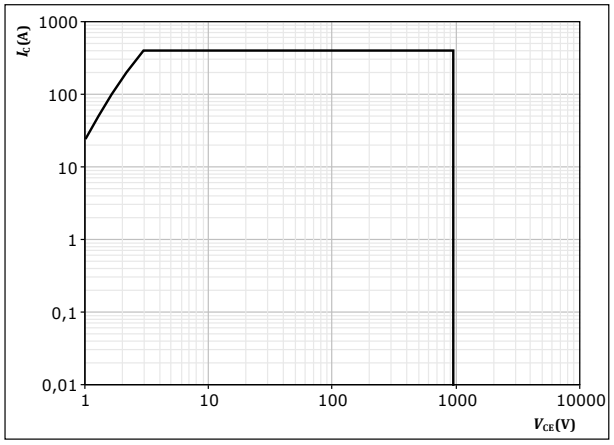
R (K/W)	τ (s)
6,56E-02	1,61E+00
1,54E-01	1,15E-01
9,21E-02	2,31E-02
1,13E-02	2,30E-03
1,31E-02	3,26E-04

Boost Switch Characteristics

figure 12. **IGBT**

Safe operating area

$I_C = f(V_{CE})$



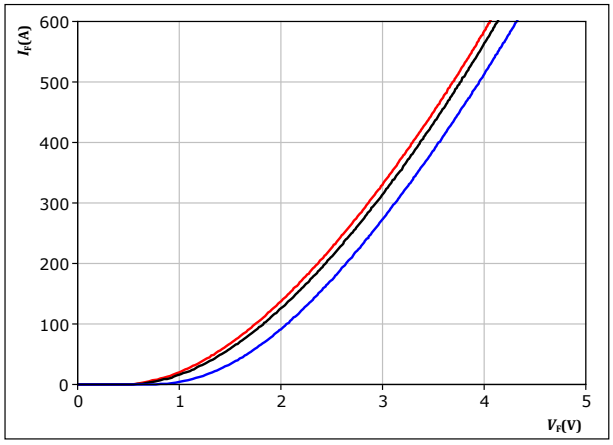
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

Boost Diode Characteristics

figure 13. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



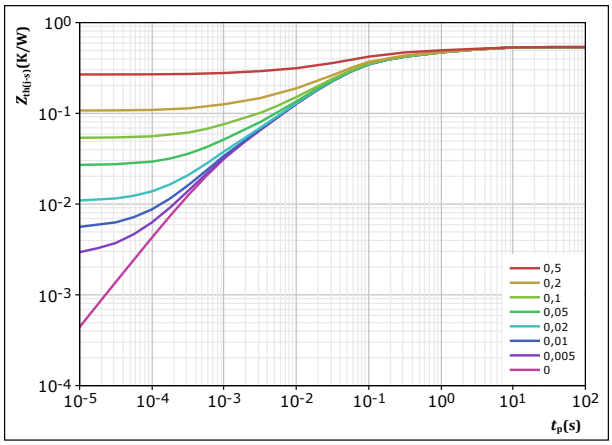
t_p = 250 µs

T_j: 25 °C, 125 °C, 150 °C

figure 14. **FWD**

Transient thermal impedance as a function of pulse width

$Z_{th(j-s)} = f(t_p)$



D = t_p / T

$R_{th(j-s)}$ = 0,536 K/W

FWD thermal model values

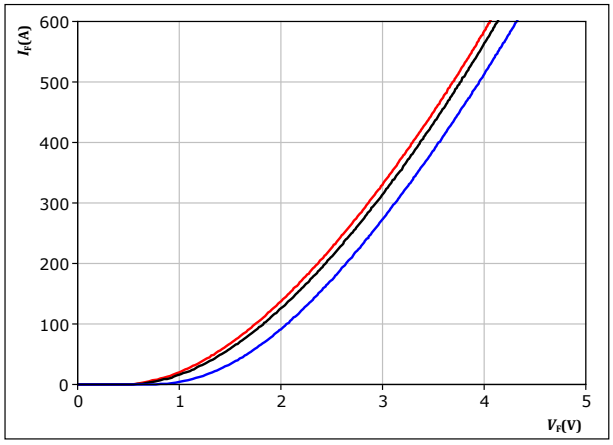
R (K/W)	τ (s)
7,69E-02	3,35E+00
9,02E-02	4,45E-01
2,58E-01	5,60E-02
8,45E-02	9,21E-03
2,68E-02	8,82E-04

Boost Sw. Inv. Diode Characteristics

figure 15. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



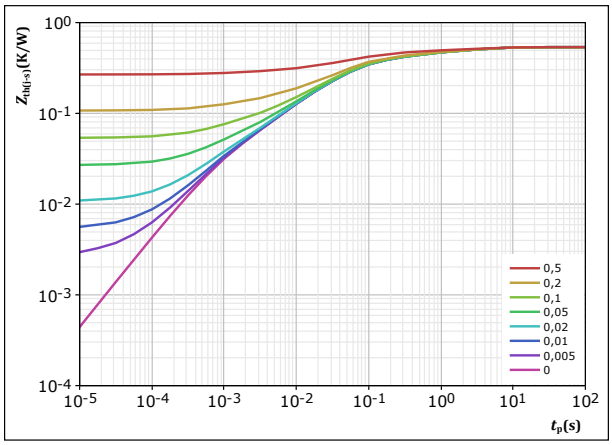
t_p = 250 µs

T_j: 25 °C, 125 °C, 150 °C

figure 16. **FWD**

Transient thermal impedance as a function of pulse width

$Z_{th(j-s)} = f(t_p)$



D = t_p / T

$R_{th(j-s)}$ = 0,536 K/W

FWD thermal model values

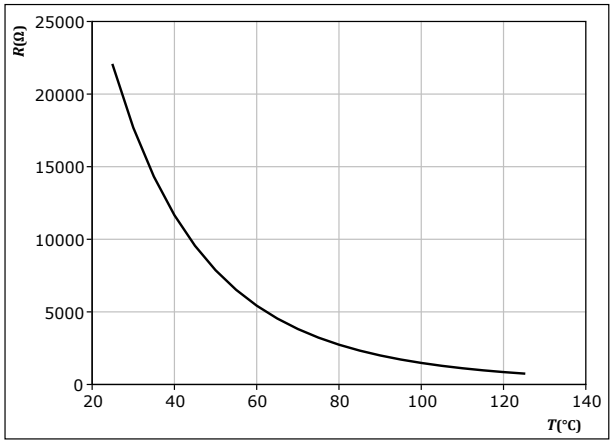
R (K/W)	τ (s)
7,69E-02	3,35E+00
9,02E-02	4,45E-01
2,58E-01	5,60E-02
8,45E-02	9,21E-03
2,68E-02	8,82E-04

Thermistor Characteristics

figure 17. **Thermistor**

Typical NTC characteristic as function of temperature

$R_T = f(T)$

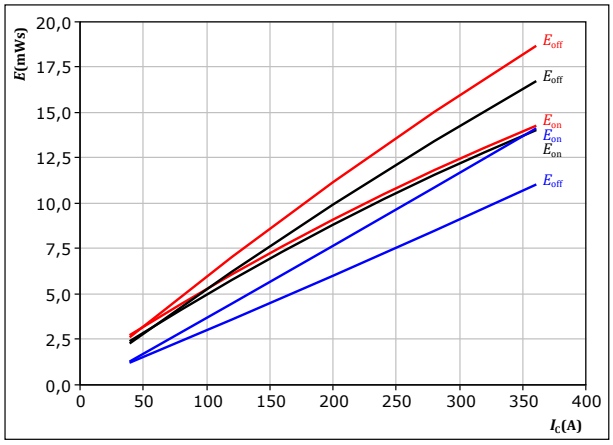


Buck Switching Characteristics

figure 18. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



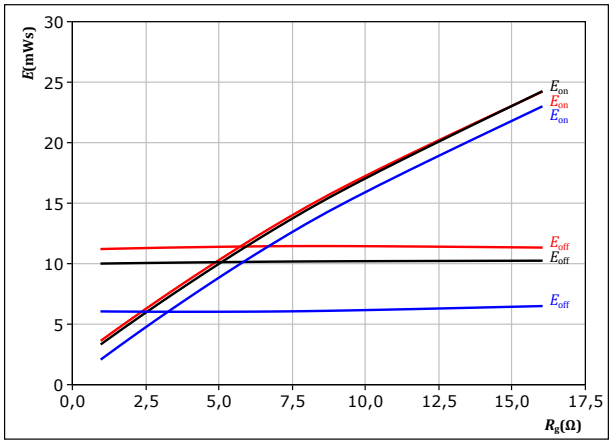
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C
R_{goff} =	4	Ω		

figure 19. **IGBT**

Typical switching energy losses as a function of IGBT turn on gate resistor

$E = f(R_g)$



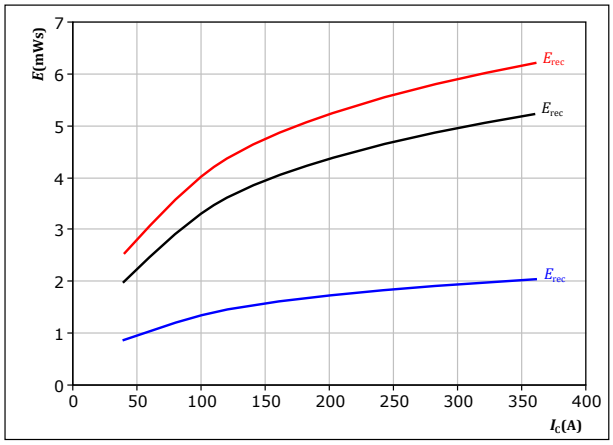
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

figure 20. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



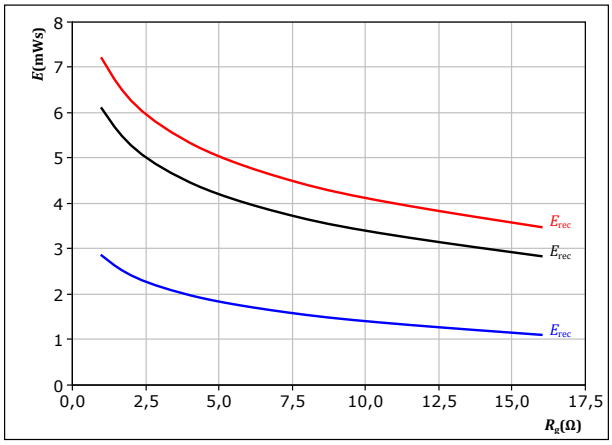
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 21. **FWD**

Typical reverse recovered energy loss as a function of IGBT turn on gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

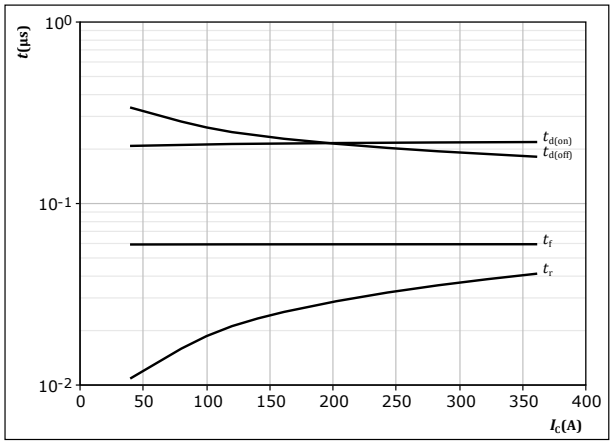
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

Buck Switching Characteristics

figure 22. **IGBT**

Typical switching times as a function of collector current

$t = f(I_C)$



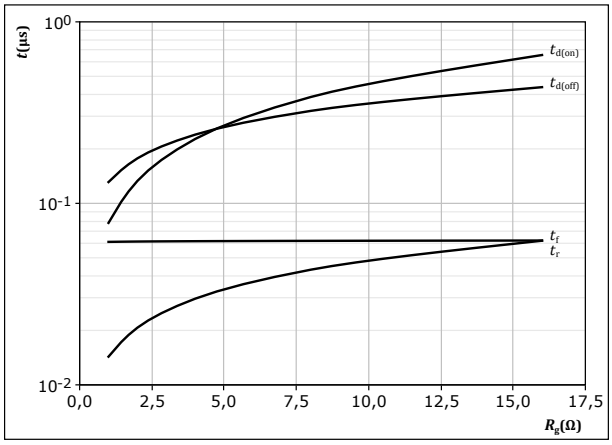
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 23. **IGBT**

Typical switching times as a function of IGBT turn on gate resistor

$t = f(R_g)$



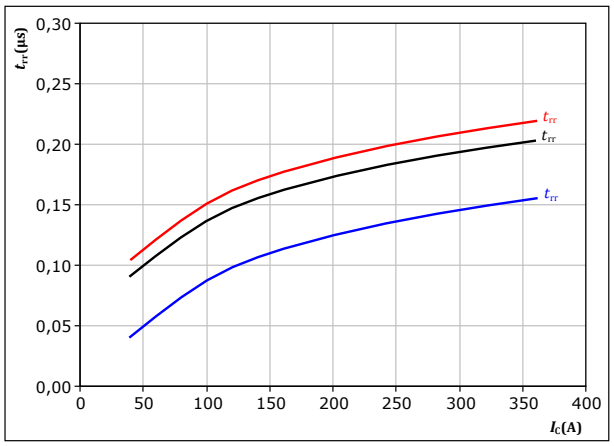
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	200	A

figure 24. **FWD**

Typical reverse recovery time as a function of collector current

$t_{rr} = f(I_C)$



With an inductive load at

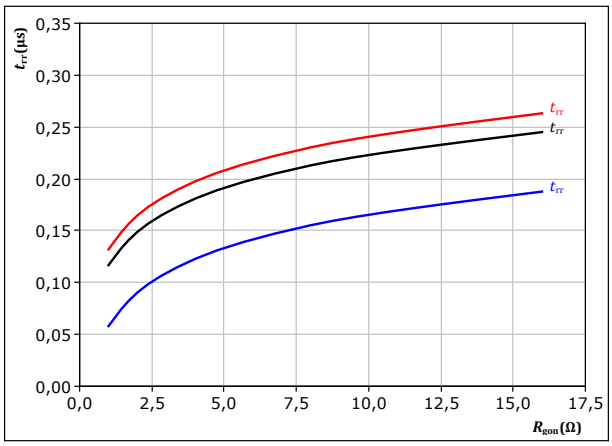
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

T_j: 25 °C, 125 °C, 150 °C

figure 25. **FWD**

Typical reverse recovery time as a function of IGBT turn on gate resistor

$t_{rr} = f(R_{gon})$



With an inductive load at

V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	200	A

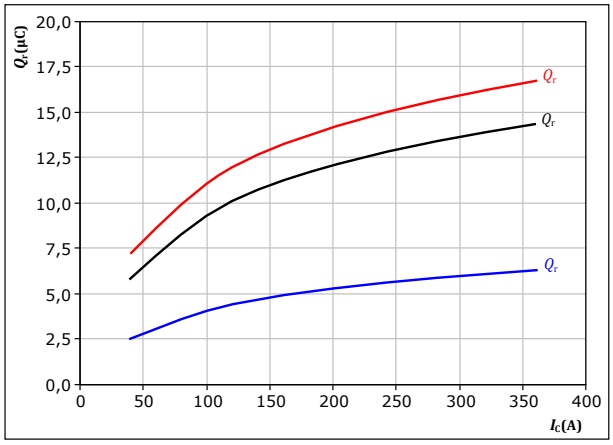
T_j: 25 °C, 125 °C, 150 °C

Buck Switching Characteristics

figure 26. **FWD**

Typical recovered charge as a function of collector current

$Q_r = f(I_C)$



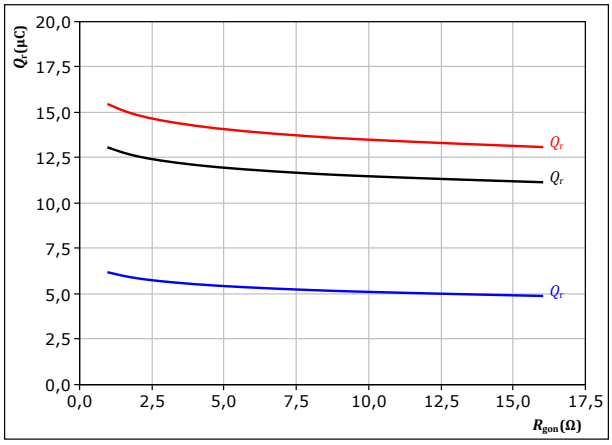
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 27. **FWD**

Typical recovered charge as a function of IGBT turn on gate resistor

$Q_r = f(R_{gon})$



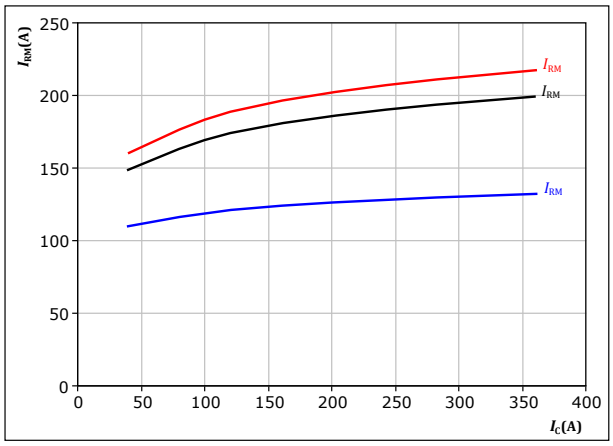
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

figure 28. **FWD**

Typical peak reverse recovery current as a function of collector current

$I_{RM} = f(I_C)$



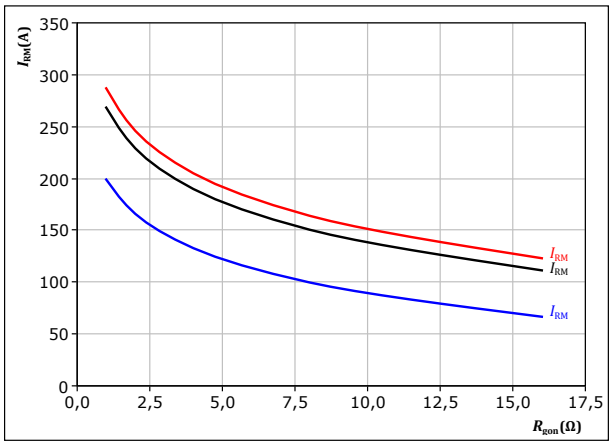
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 29. **FWD**

Typical peak reverse recovery current as a function of IGBT turn on gate resistor

$I_{RM} = f(R_{gon})$



With an inductive load at

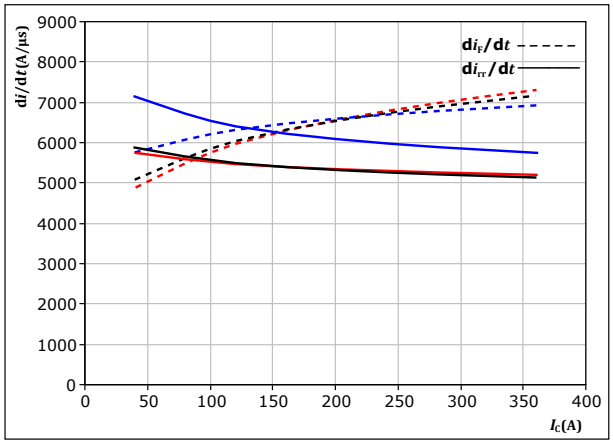
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

Buck Switching Characteristics

figure 30. **FWD**

Typical rate of fall of forward and reverse recovery current as a function of collector current

di_F/dt, di_{rr}/dt = f(I_C)



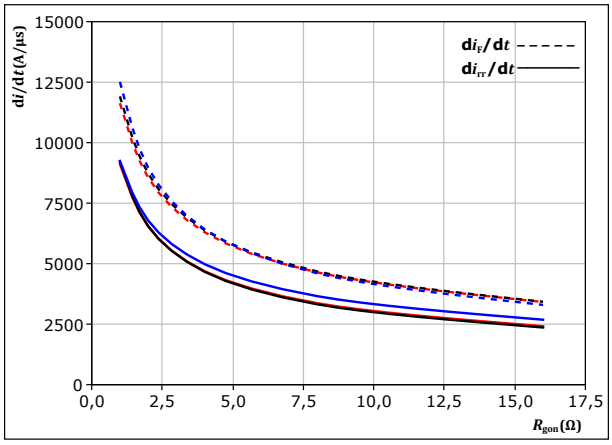
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 31. **FWD**

Typical rate of fall of forward and reverse recovery current as a function of turn on gate resistor

di_F/dt, di_{rr}/dt = f(R_{gon})



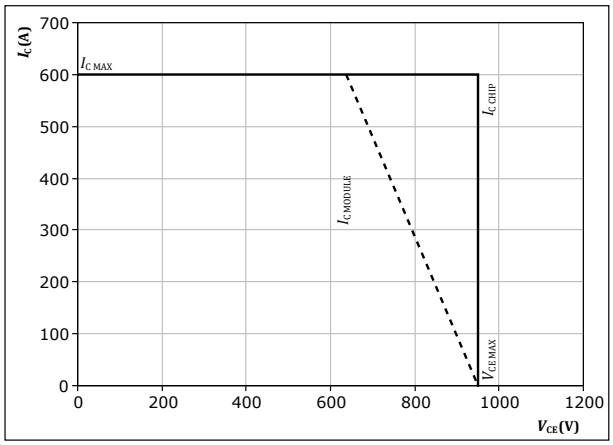
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

figure 32. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



At

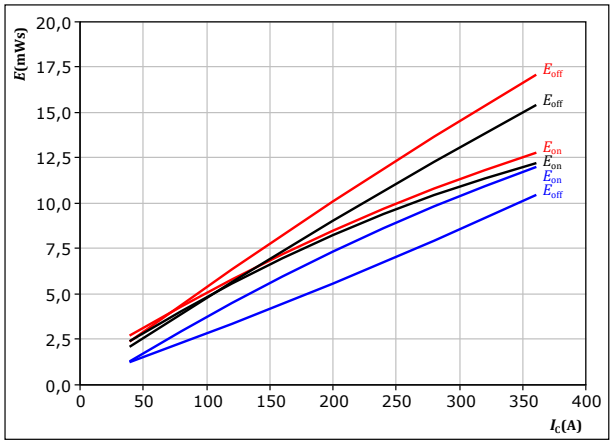
T_j =	150	°C
R_{gon} =	4	Ω
R_{goff} =	4	Ω

Boost Switching Characteristics

figure 33. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



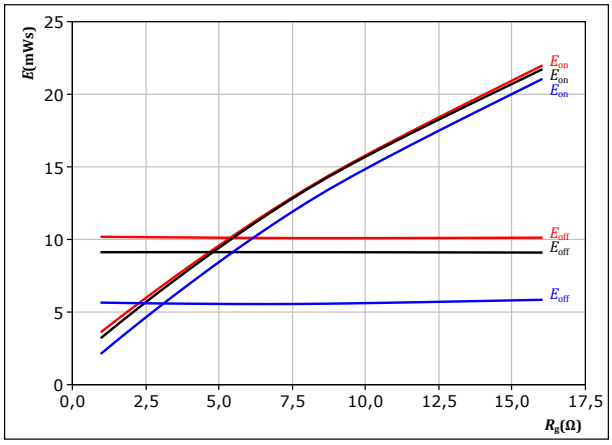
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C
R_{goff} =	4	Ω		

figure 34. **IGBT**

Typical switching energy losses as a function of IGBT turn on gate resistor

$E = f(R_g)$



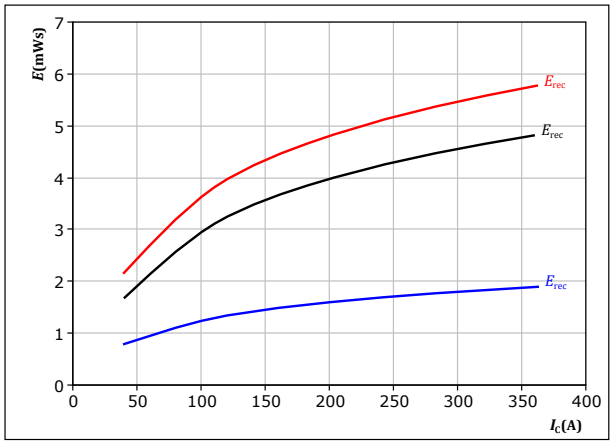
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

figure 35. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



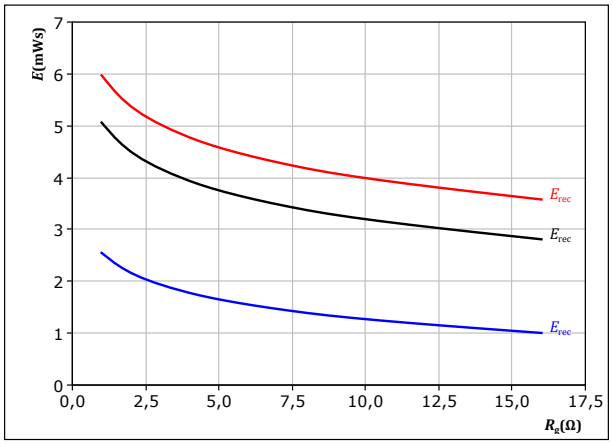
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 36. **FWD**

Typical reverse recovered energy loss as a function of IGBT turn on gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

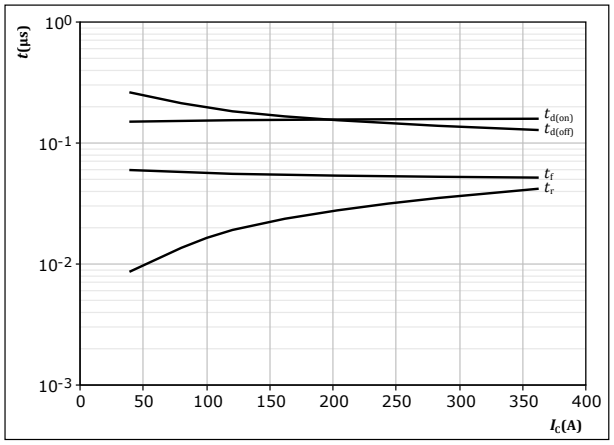
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

Boost Switching Characteristics

figure 37. **IGBT**

Typical switching times as a function of collector current

t = f(I_C)



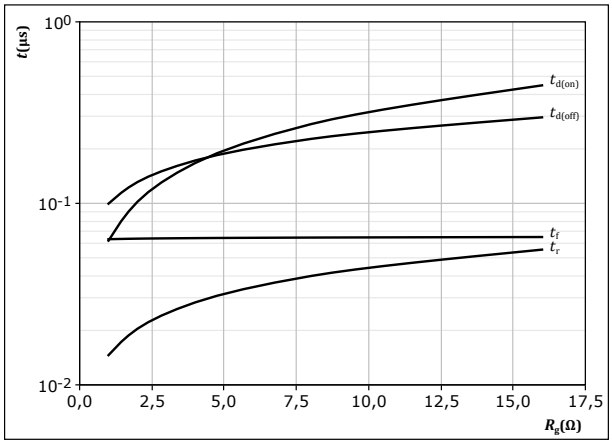
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 38. **IGBT**

Typical switching times as a function of IGBT turn on gate resistor

t = f(R_g)



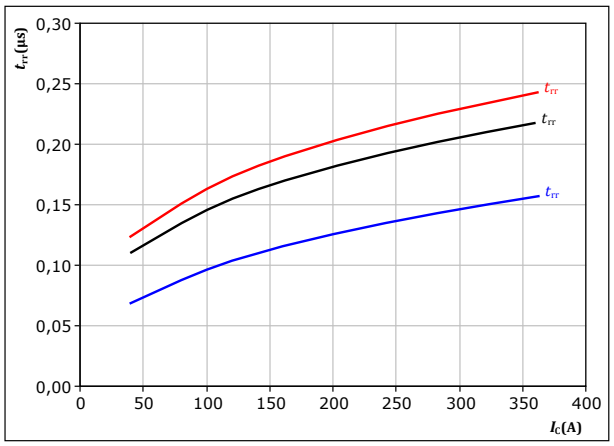
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	200	A

figure 39. **FWD**

Typical reverse recovery time as a function of collector current

t_{rr} = f(I_C)



With an inductive load at

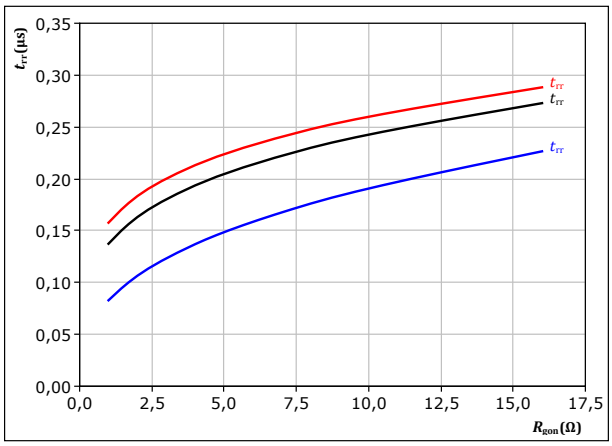
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

T_j: 25 °C, 125 °C, 150 °C

figure 40. **FWD**

Typical reverse recovery time as a function of IGBT turn on gate resistor

t_{rr} = f(R_{gon})



With an inductive load at

V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	200	A

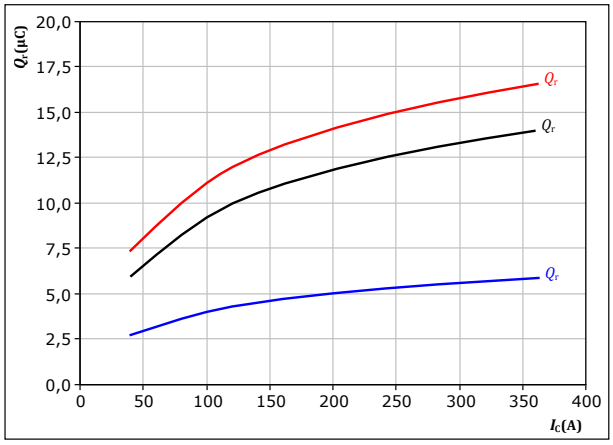
T_j: 25 °C, 125 °C, 150 °C

Boost Switching Characteristics

figure 41. **FWD**

Typical recovered charge as a function of collector current

$Q_r = f(I_C)$



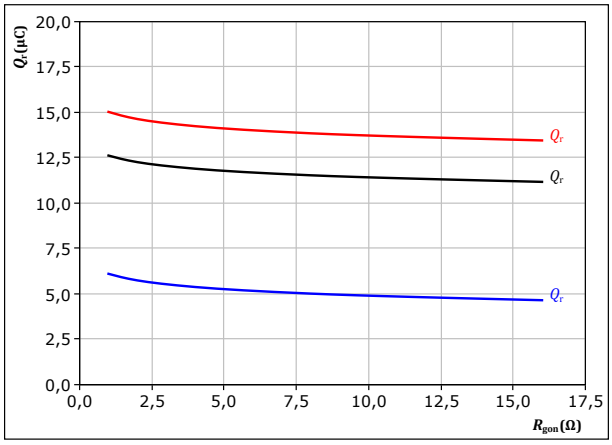
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 42. **FWD**

Typical recovered charge as a function of IGBT turn on gate resistor

$Q_r = f(R_{gon})$



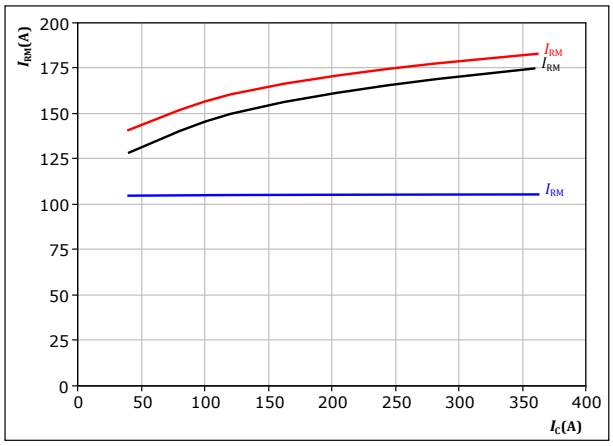
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

figure 43. **FWD**

Typical peak reverse recovery current as a function of collector current

$I_{RM} = f(I_C)$



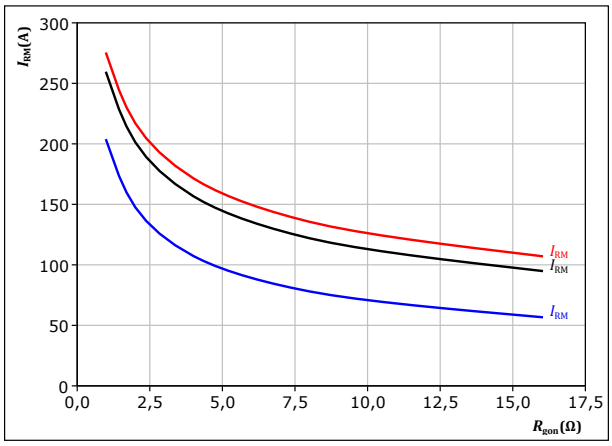
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 44. **FWD**

Typical peak reverse recovery current as a function of IGBT turn on gate resistor

$I_{RM} = f(R_{gon})$



With an inductive load at

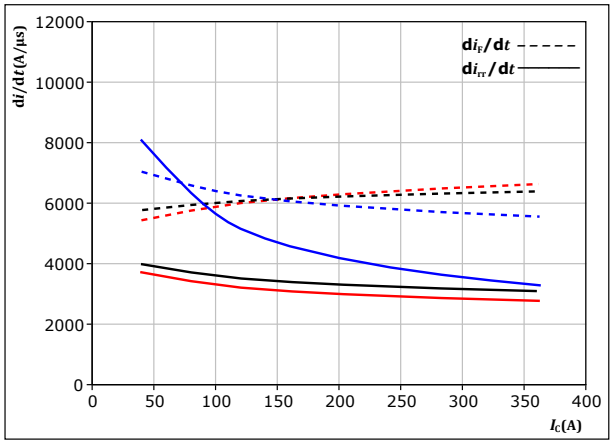
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

Boost Switching Characteristics

figure 45. **FWD**

Typical rate of fall of forward and reverse recovery current as a function of collector current

di_F/dt, di_{rr}/dt = f(I_C)



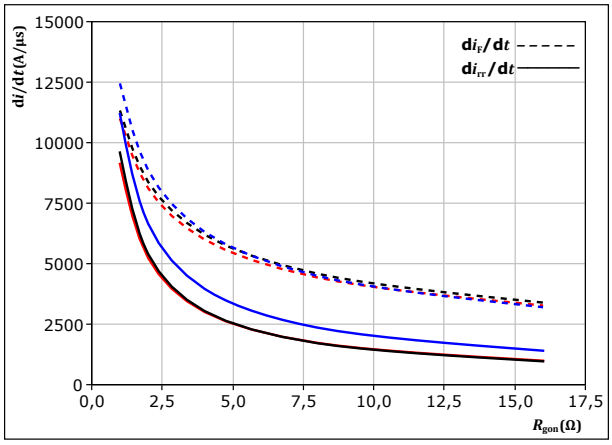
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 46. **FWD**

Typical rate of fall of forward and reverse recovery current as a function of turn on gate resistor

di_F/dt, di_{rr}/dt = f(R_{gon})



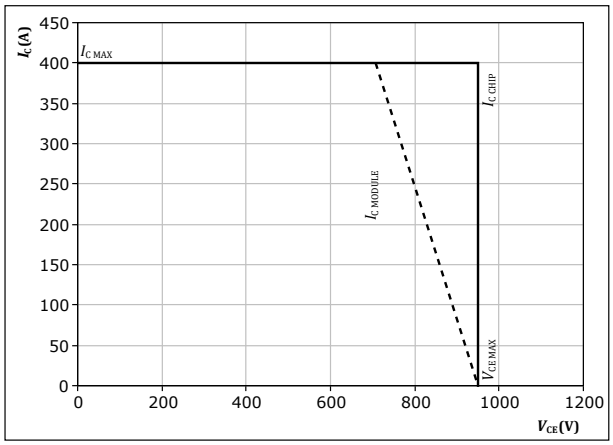
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	200	A		150 °C

figure 47. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



At

T_j =	150	°C
R_{gon} =	4	Ω
R_{goff} =	4	Ω

Switching Definitions

figure 48. **IGBT**

Turn-off Switching Waveforms & definition of t_{doff}, t_{Eoff} (t_{tEoff} = integrating time for E_{off})

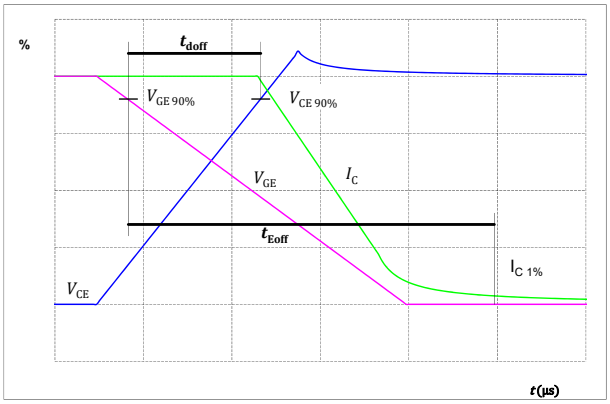


figure 49. **IGBT**

Turn-on Switching Waveforms & definition of t_{don}, t_{Eon} (t_{Eon} = integrating time for E_{on})

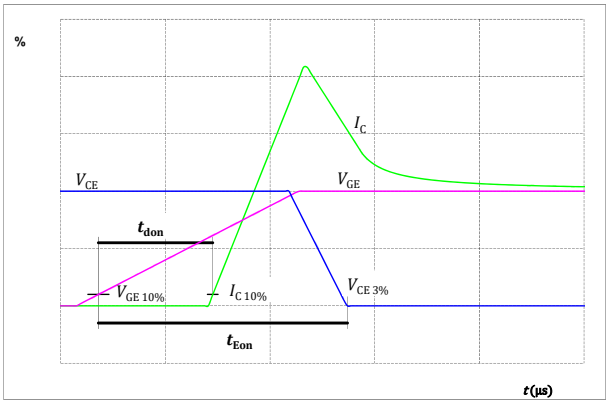


figure 50. **IGBT**

Turn-off Switching Waveforms & definition of t_f

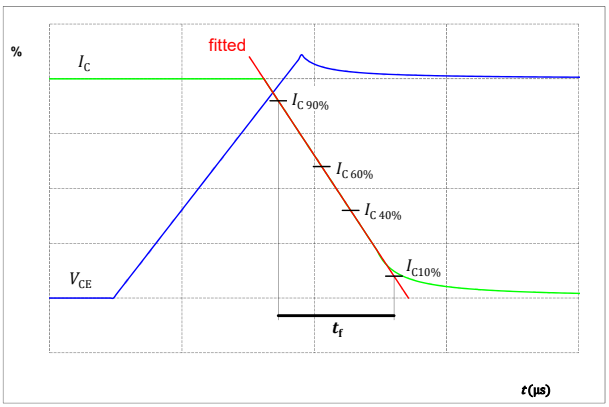
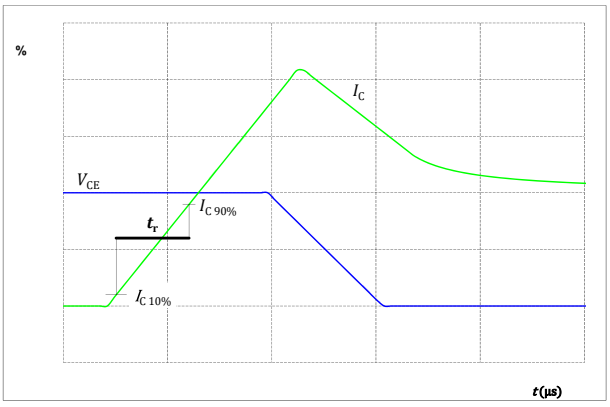


figure 51. **IGBT**

Turn-on Switching Waveforms & definition of t_r



Switching Definitions

figure 52. **FWD**

Turn-off Switching Waveforms & definition of t_{rr}

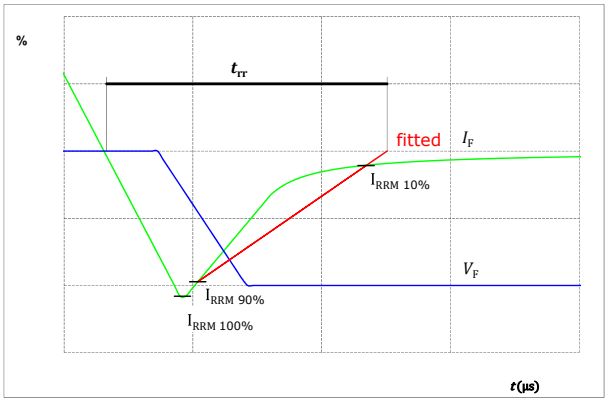
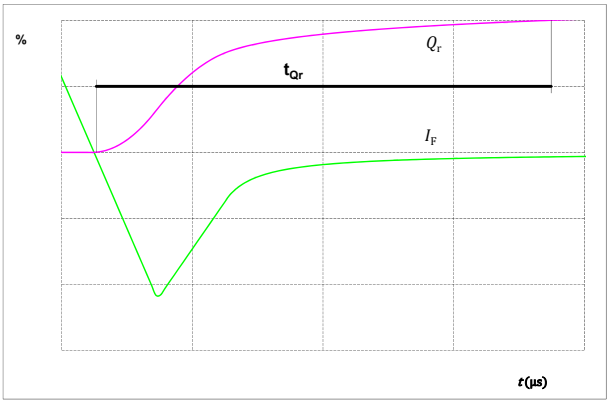


figure 53. **FWD**

Turn-on Switching Waveforms & definition of t_{Qr} (t_{Qr} = integrating time for Q_r)



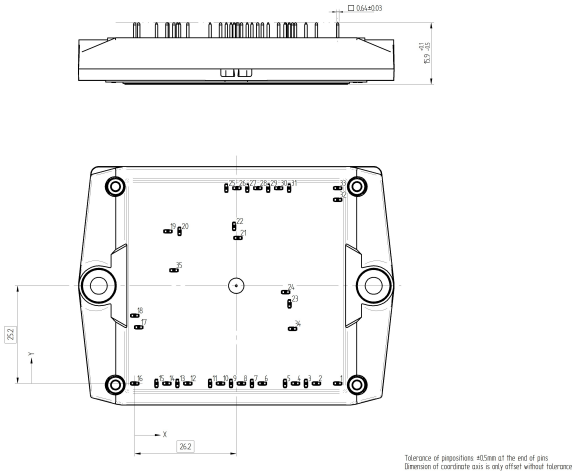
Ordering Code	
Version	**Ordering Code**
Without thermal paste	B0-SL10NIA300S704-LS78F98Z
With thermal paste (5,2 W/mK, PTM6000HV)	B0-SL10NIA300S704-LS78F98Z-/7/
With thermal paste (5,2 W/mK, PTM6000HV) and Protection Foil	B0-SL10NIA300S704-LS78F98Z-/7F/

Marking

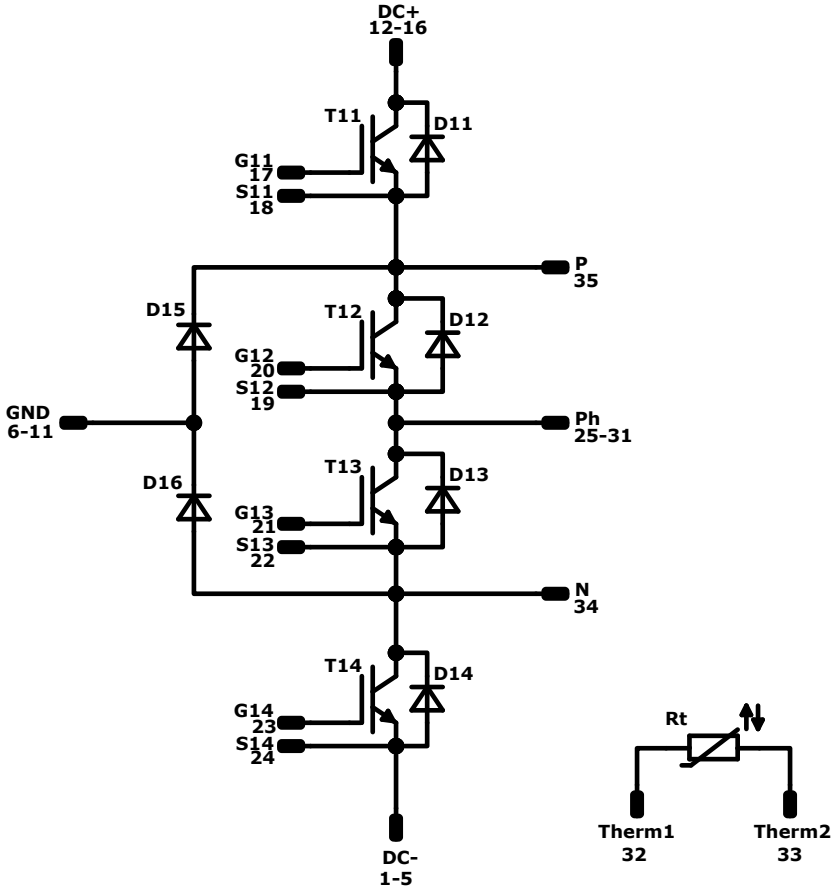
	Name		Date code	UL & VIN	Lot	Serial
Text	NN-NNNNNNNNNNNNNN-TTTTTTVV		WWYY	UL VIN	LLLLL	SSSS
Datamatrix	**Type&Ver**	**Lot number**	**Serial**	**Date code**		
	TTTTTTTVV	LLLLL	SSSS	WWYY		

Outline

Pin table [mm]			
Pin	X	Y	Function
1	52,4	0	DC-
2	46,9	0	DC-
3	44,2	0	DC-
4	41,5	0	DC-
5	38,8	0	DC-
6	32,95	0	GND
7	30,25	0	GND
8	27,55	0	GND
9	24,85	0	GND
10	22,15	0	GND
11	19,45	0	GND
12	13,7	0	DC+
13	11	0	DC+
14	8,3	0	DC+
15	5,6	0	DC+
16	0	0	DC+
17	1	14,5	G11
18	0	17,5	S11
19	8,55	39,25	S12
20	11,55	39,25	G12
21	26,65	37,55	G13
22	25,65	40,55	S13
23	39,95	20,55	G14
24	38,95	23,55	S14
25	23,65	50,4	Ph
26	26,35	50,4	Ph
27	29,05	50,4	Ph
28	31,75	50,4	Ph
29	34,45	50,4	Ph
30	37,15	50,4	Ph
31	39,85	50,4	Ph
32	52,4	47,4	Therm1
33	52,4	50,4	Therm2
34	40,75	14,1	N
35	10,1	29,2	P



Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T11, T14	IGBT	950 V	300 A	Buck Switch	
D15, D16	FWD	950 V	200 A	Buck Diode	
T12, T13	IGBT	950 V	200 A	Boost Switch	
D14, D11	FWD	950 V	200 A	Boost Diode	
D13, D12	FWD	950 V	200 A	Boost Sw. Inv. Diode	
Rt	Thermistor			Thermistor	

Packaging instruction				
Standard packaging quantity (SPQ) 45	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for *flow* S3 packages see vincotech.com website.

Package data
Package data for *flow* S3 packages see vincotech.com website.

Vincotech thermistor reference
See Vincotech thermistor reference table at vincotech.com website.

UL recognition and file number
This device is UL 1557 recognized under E192116 up to a junction temperature under switching condition $T_{j,op}$=150°C and up to 4000VAC/1min isolation voltage. For more information see vincotech.com website.

Document No.:	Date:	Modification:	Pages
B0-SL10NIA300S704-LS78F98Z-D4-14	23 Jan. 2026	Change Housing according to PCN-2024-006	

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.