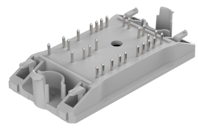
***flow* PFC 0** | **600 V/ 2 x 99 mΩ / 200 kHz**

Features

- Vincotech clip-in housing
- Compact and low inductance design
- Suitable for Interleaved topology
- Suitable for curent sensing in drain
- CP series CoolMOS™ and SiC boost FWD

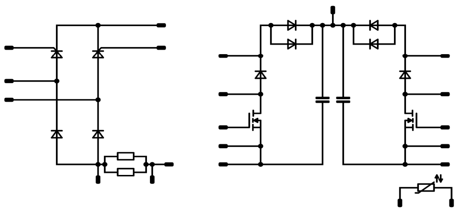
flow 0 12 mm housing



Target Applications

- PFC for welding
- PFC for SMPS
- PFC for motor drives
- PFC for UPS
- PFC for battery charger

Schematic



Types

- 10-FZ062TA099FH01-P980D28

CoolMOS is a trademark of Infineon Technologies AG

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
Rectifier Diode				
Repetitive peak reverse voltage	V_{RRM}		1600	V
DC forward current	I_F	$T_j = T_{jmax}$ T_s = 80 °C	35	A
Surge (non-repetitive) forward current	I_{FSM}	t_p = 10 ms	250	A
I^2t-value	I^2t	t_p = 10 ms	310	A²s
Power dissipation	P_{tot}	$T_j = T_{jmax}$ T_s = 80 °C	40	W
Maximum Junction Temperature	T_{jmax}		150	°C
Rectifier Thyristor				
Repetitive peak reverse voltage	V_{RRM}		800	V
DC forward current	I_F	$T_j = T_{jmax}$ T_s = 80 °C	34	A
Surge (non-repetitive) forward current	I_{FSM}	t_p = 10 ms	250	A
I^2t-value	I^2t	t_p = 10 ms	310	A²s
Power dissipation	P_{tot}	$T_j = T_{jmax}$ T_s = 80 °C	44	W
Maximum Junction Temperature	T_{jmax}		150	°C

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Condition		Value	Unit
PFC Switch					
Drain to source voltage	V_{DS}			600	V
DC drain current	I_D	$T_j = T_{jmax}$	T_s = 80 °C	16	A
Pulsed drain current	I_{Dpulse}	t_p limited by T_{jmax}		93	A
Avalanche energy, single pulse	E_{AS}	I_D = 11 A V_{DD} = 50 V		800	mJ
Avalanche energy, repetitive	E_{AR}	I_D = 11 A t_{AR} limited by T_{jmax} V_{DD} = 50 V		1,2	mJ
Avalanche current, repetitive	I_{AR}	t_p limited by T_{jmax}		11	A
dv/dt ruggedness	dv/dt	V_{DS} = 0…480 V		50	V/ns
Reverse diode dv/dt	dv/dt			15	V/ns
Power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	62	W
Gate-source peak voltage	V_{GSS}			±20	V
Maximum Junction Temperature	T_{jmax}			150	°C
Current Transformer Prot. Diode					
Peak Repetitive Reverse Voltage	V_{RRM}			600	V
DC forward current	I_F	$T_j = T_{jmax}$	T_s = 80 °C	8	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		16	A
Power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	14	W
Maximum Junction Temperature	T_{jmax}			175	°C
PFC Diode					
Peak Repetitive Reverse Voltage	V_{RRM}			650	V
DC forward current	I_F	$T_j = T_{jmax}$	T_s = 80 °C	22	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		114	A
Power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	50	W
Maximum Junction Temperature	T_{jmax}			175	°C
Shunt Resistor					
DC forward current	I_F		T_c = 25 °C	31,6	A
Power dissipation	P_{tot}		T_c = 25 °C	10	W
DC link Capacitance					
Max.DC voltage	V_{MAX}		T_c = 25 °C	500	V
Thermal Properties					
Storage temperature	T_{stg}			-40…+125	°C
Operation temperature under switching condition	T_{op}			-40…+(T_{jmax} - 25)	°C
Isolation Properties					
Isolation voltage	V_{isol}	DC Test Voltage*	t_p = 2 s	6000	V
		AC Voltage	t_p = 1 min	2500	V
Creepage distance				min 12,7	mm
Clearance				9,42	mm
Comparative Tracking Index	CTI			> 200	

100* tested in production

Characteristic Values

Parameter	Symbol	Conditions					Value			Unit
			V_{GE} [V] V_{GS} [V]	V_r [V] V_{CE} [V] V_{DS} [V]	I_C [A] I_F [A] I_D [A]	T_j [°C]	Min	Typ	Max	
Rectifier Diode										
Forward voltage	V_F				30	25 125		1,16 1,11	1,4	V
Threshold voltage (for power loss calc. only)	V_{to}				30	25 125		0,9 0,77		V
Slope resistance (for power loss calc. only)	r_t				30	25 125		9 12		mΩ
Reverse current	I_r			1500		25 150			0,02 2	mA
Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness ≤ 50um λ = 1 W/mK						1,72		K/W
Rectifier Thyristor										
Forward voltage	V_F				30	25 125		1,25 1,22	1,6	V
Threshold voltage (for power loss calc. only)	V_{to}				30	25 125		0,93 0,82		V
Slope resistance (for power loss calc. only)	r_t				30	25 125		0,011 0,014		mΩ
Reverse current	I_r			800		25 125			0,05 2	mA
Gate controlled delay time	t_{GD}	I_g = 0,5 A di_g/dt = 0,5 A/us		V_D = 1/2 V_{drm}		25			2	μs
Gate controlled rise time	t_{GR}	I_g = 0,2 A di_g/dt = 0,2 A/us				25		<1		μs
Critical rate of rise of off-state voltage	$(dv/dt)_{cr}$			V_D = 2/3 V_{drm}		125			500	V/μs
Critical rate of rise of on-state current	$(di/dt)_{cr}$	I_g = 0,2 A f = 50 Hz		V_D = 2/3 V_{drm}	40	125			150	A/μs
Circuit commutated turn-off time	t_q	V_D = 2/3 V_{drm} t_p = 200 μs		100	26	125		150		μs
Holding current	I_H	V_D = 6 V				25			50	mA
Latching current	I_L	t_p = 10 μs I_g = 0,2 A				25			90	mA
Gate trigger voltage	V_{GT}	V_D = 6 V				25 -40			1,3 1,6	V
Gate trigger current	I_{GT}	V_D = 6 V				25 -40	11		28 50	mA
Gate non-trigger voltage	V_{GD}			V_D = 1/2 V_{drm}		125			0,2	V
Gate non-trigger current	I_{GD}			V_D = 1/2 V_{drm}		125			1	mA
Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness ≤ 50um λ = 1 W/mK						1,57		K/W
PFC Switch										
Avalanche breakdown voltage	$V_{(BR)DS}$		0		0,0003	25	600			V
Static drain to source ON resistance	$r_{DS(on)}$		10		18	25 125		111 223		mΩ
Gate threshold voltage	$V_{(GS)th}$		V_{DS}		0,0012	25	2,5	3,0	3,9	V
Gate to Source Leakage Current	I_{GSS}		20	0		25			200	nA
Zero Gate Voltage Drain Current	I_{DSS}		0	600		25			10	uA
Turn On Delay Time	$t_{d(on)}$	R_{goff} = 4 Ω R_{gon} = 4 Ω	10	400	18	25 125		20 18		ns
Rise Time	t_r					25 125		4 4		ns
Turn off delay time	$t_{d(off)}$					25 125		63 66		ns
Fall time	t_f					25 125		2 3		ns
Turn-on energy loss	E_{on}					25 125		0,045 0,050		mWs
Turn-off energy loss	E_{off}					25 125		0,015 0,019		mWs
Total gate charge	Q_{GE}		0	400	18	25		60		nC
Gate to source charge	Q_{GS}					25 125		14		nC
Gate to drain charge	Q_{GD}					25 125		20		nC
Input capacitance	C_{iss}	f = 1 MHz	0	100		25		2800		pF
Output capacitance	C_{oss}							130		pF
Reverse transfer capacitance	C_{rss}							2,5		pF
Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness ≤ 50um λ = 1 W/mK						1,13		K/W

Characteristic Values

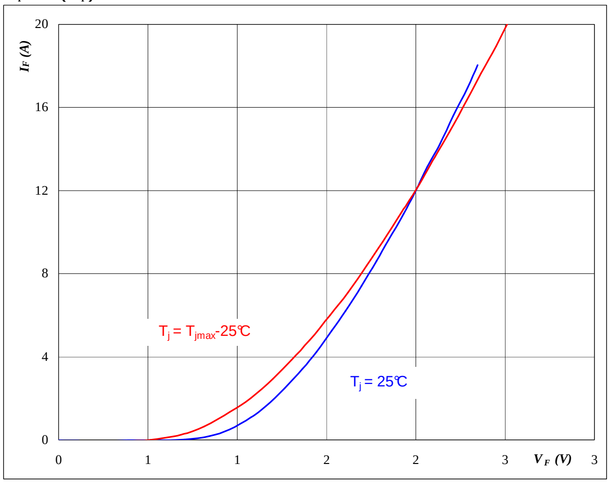
Parameter	Symbol	Conditions	V_{GE} [V] / V_{GS} [V]	V_r [V] / V_{CE} [V] / V_{DS} [V]	I_C [A] / I_F [A] / I_D [A]	T_j [°C]	Min	Typ	Max	Unit
Current Transformer Prot. Diode										
Diode forward voltage	V_F				6	25 125		1,66 1,61	2	V
Thermal resistance junction to sink	$R_{th(j\text{-}s)}$	Thermal grease thickness ≤ 50um λ = 1 W/mK						5,12		K/W
PFC Diode										
Forward voltage	V_F				16	25 150		1,49 1,73	1,8	V
Reverse leakage current	I_{rm}			600		25			120	µA
Peak recovery current	I_{RRM}					25 150		29,49 24,96		A
Reverse recovery time	t_{rr}					25 150		7 7		ns
Reverse recovery charge	Q_{rr}	R_{gon} = 4 Ω	10	400	18	25 150		0,21 0,18		µC
Reverse recovered energy	E_{rec}					25 150		0,02 0,02		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 150		14249 10837		A/µs
Thermal resistance junction to sink	$R_{th(j\text{-}s)}$	Thermal grease thickness ≤ 50um λ = 1 W/mK						1,90		K/W
Shunt Resistor										
R1 value	R						9,4	10	10,6	mΩ
Temperature coeficient	t_c	20 °C to 60 °C						< 50		ppm/K
Internal heat resistance	R_{thi}							< 6,5		K/W
Inductance	L							< 3		nH
DC link Capacitor										
C value	C						480	540	600	nF
Thermistor										
Rated resistance	R					25		21,5		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	R_{100} = 1486 Ω				100	-4,5		+4,5	%
Power dissipation	P					25		210		mW
Power dissipation constant						25		3,5		mW/K
B-value	$B_{(25/50)}$					25		3884		K
B-value	$B_{(25/100)}$					25		3964		K
Vincotech NTC Reference									F	

Current Transformer Prot. Diode

figure 1. **Inverse Diode**

Typical diode forward current as a function of forward voltage

$I_F = f(V_F)$

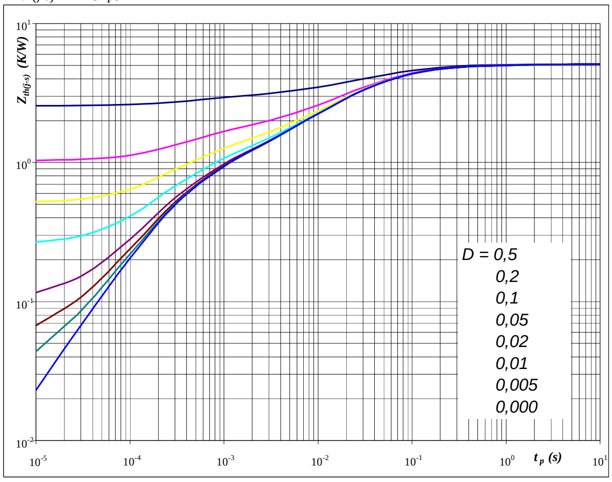


t_p = 250 µs

figure 2. **Inverse Diode**

Diode transient thermal impedance as a function of pulse width

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



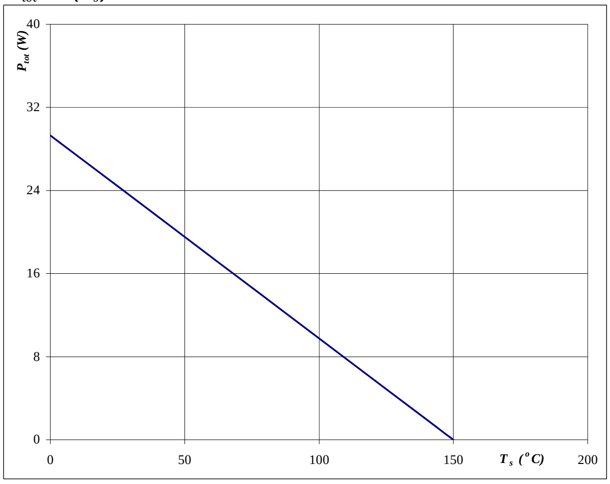
D = t_p / T

$R_{th(j-s)}$ = 5,12 K/W

figure 3. **Inverse Diode**

Power dissipation as a function of heatsink temperature

$P_{tot} = f(T_s)$

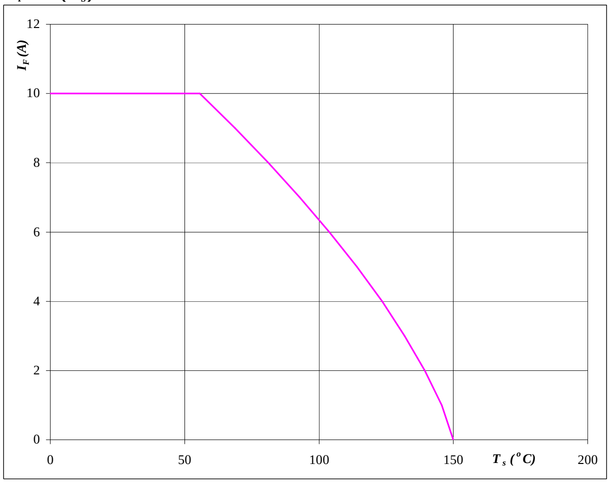


T_j = 150 ºC

figure 4. **Inverse Diode**

Forward current as a function of heatsink temperature

$I_F = f(T_s)$



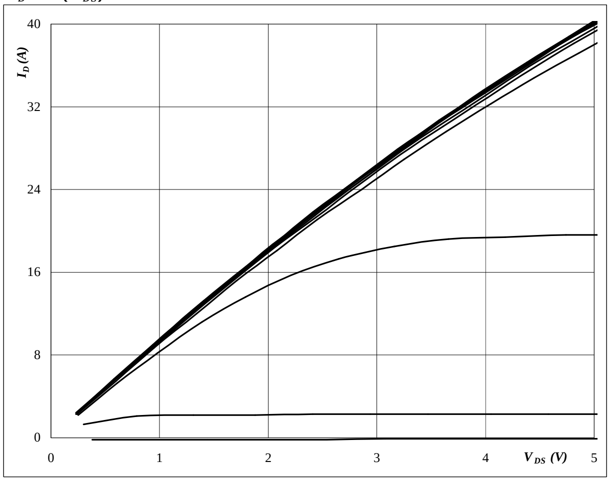
T_j = 150 ºC

PFC

figure 1. **MOSFET**

Typical output characteristics

$I_D = f(V_{DS})$

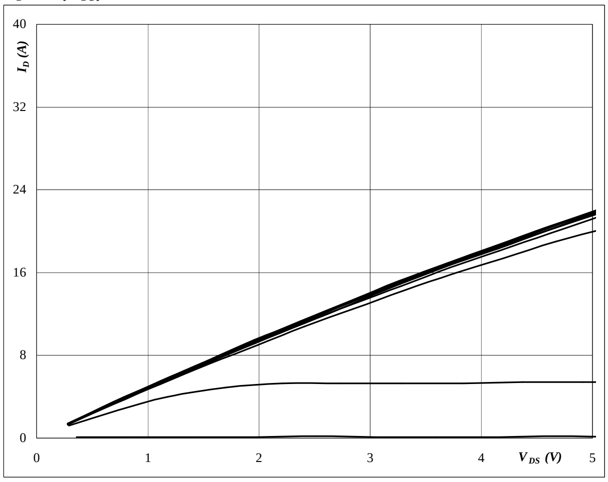


t_p = 250 µs
T_j = 25 °C
V_{GS} from 3 V to 13 V in steps of 1 V

figure 2. **MOSFET**

Typical output characteristics

$I_D = f(V_{DS})$

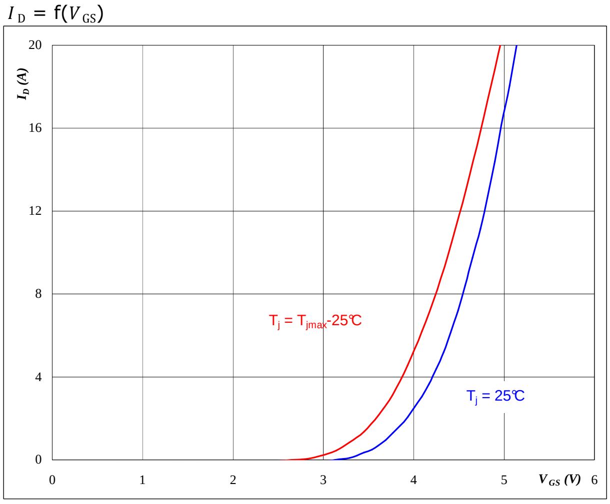


t_p = 250 µs
T_j = 125 °C
V_{GS} from 3 V to 13 V in steps of 1 V

figure 3. **MOSFET**

Typical transfer characteristics

$I_D = f(V_{GS})$

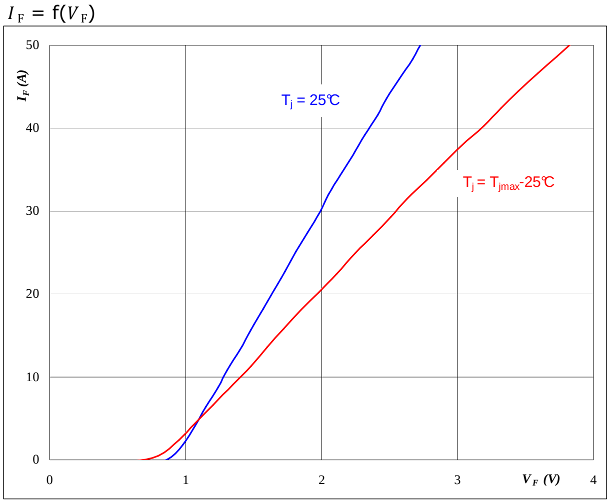


t_p = 250 µs
V_{DS} = 10 V

figure 4. **MOSFET**

Typical diode forward current as a function of forward voltage

$I_F = f(V_F)$



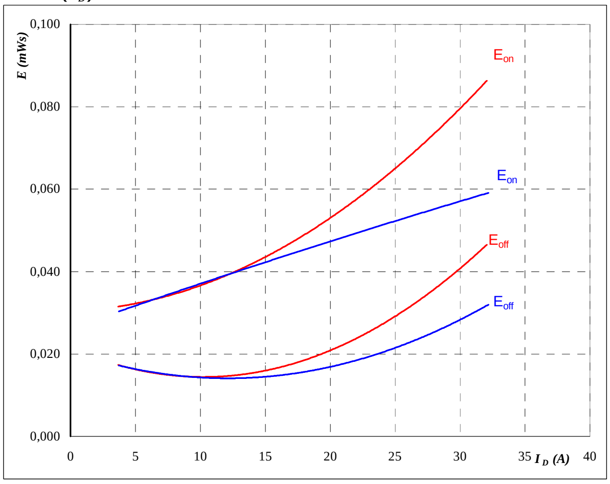
t_p = 250 µs

PFC

figure 5. **MOSFET**

Typical switching energy losses as a function of drain current

$E = f(I_D)$



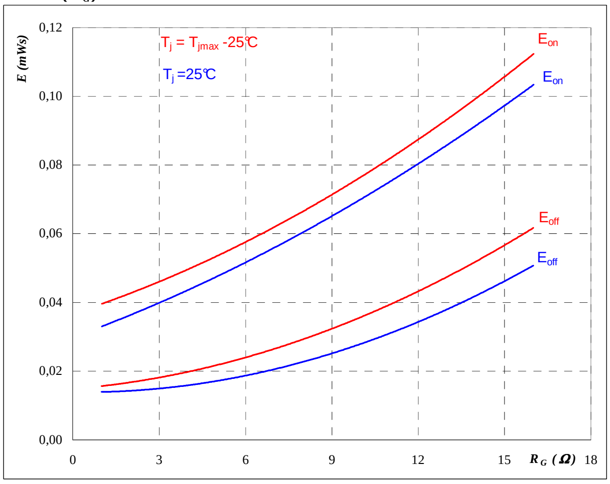
inductive load

T_j =	25/125	°C
V_{DS} =	400	V
V_{GS} =	10	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 6. **MOSFET**

Typical switching energy losses as a function of gate resistor

$E = f(R_G)$



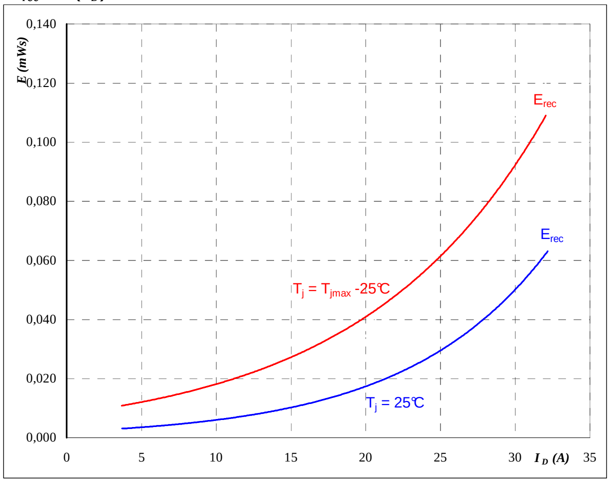
inductive load

T_j =	25/125	°C
V_{DS} =	400	V
V_{GS} =	10	V
I_D =	18	A

figure 7. **MOSFET**

Typical reverse recovery energy loss as a function of drain current

$E_{rec} = f(I_D)$



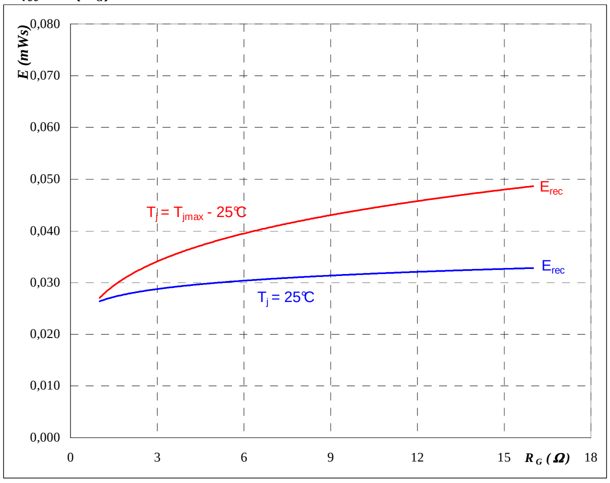
inductive load

T_j =	25/125	°C
V_{DS} =	400	V
V_{GS} =	10	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 8. **MOSFET**

Typical reverse recovery energy loss as a function of gate resistor

$E_{rec} = f(R_G)$



inductive load

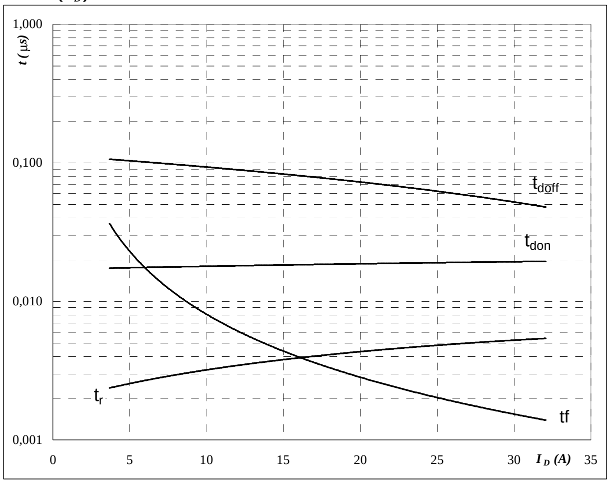
T_j =	25/125	°C
V_{DS} =	400	V
V_{GS} =	10	V
I_D =	18	A

PFC

figure 9. **MOSFET**

Typical switching times as a function of drain current

$t = f(I_D)$



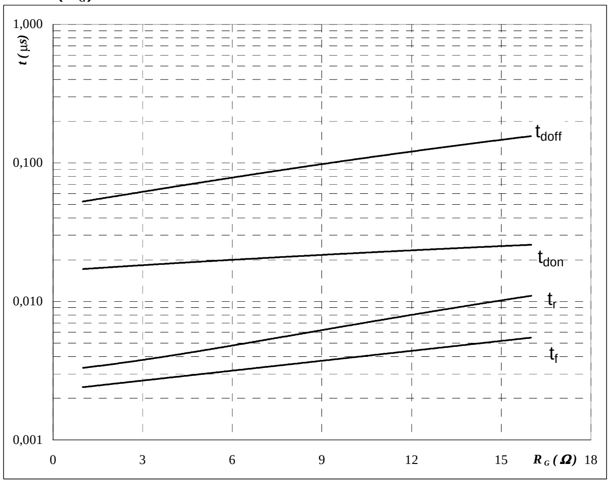
inductive load

T_j =	125	°C
V_{DS} =	400	V
V_{GS} =	10	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 10. **MOSFET**

Typical switching times as a function of gate resistor

$t = f(R_G)$



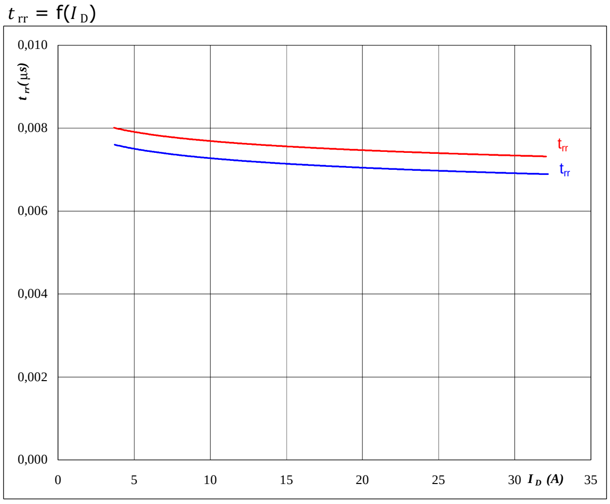
inductive load

T_j =	125	°C
V_{DS} =	400	V
V_{GS} =	10	V
I_D =	18	A

figure 11. **FWD**

Typical reverse recovery time as a function of drain current

$t_{rr} = f(I_D)$

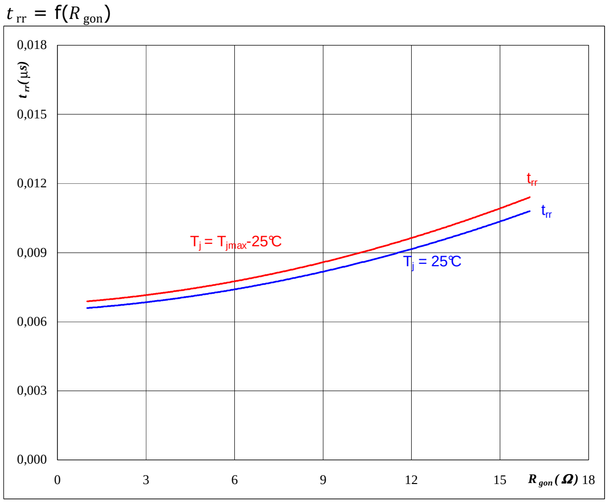


T_j =	25/125	°C
V_{DS} =	400	V
V_{GS} =	10	V
R_{gon} =	4	Ω

figure 12. **FWD**

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

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



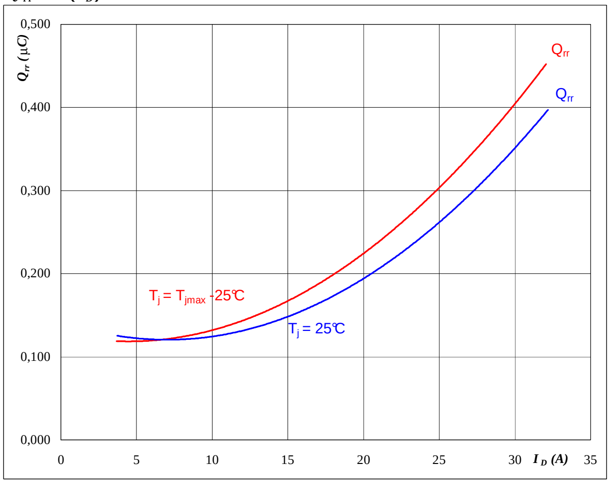
T_j =	25/125	°C
V_R =	400	V
I_F =	18	A
V_{GS} =	10	V

PFC

figure 13. FWD

Typical reverse recovery charge as a function of drain current

$Q_{rr} = f(I_D)$

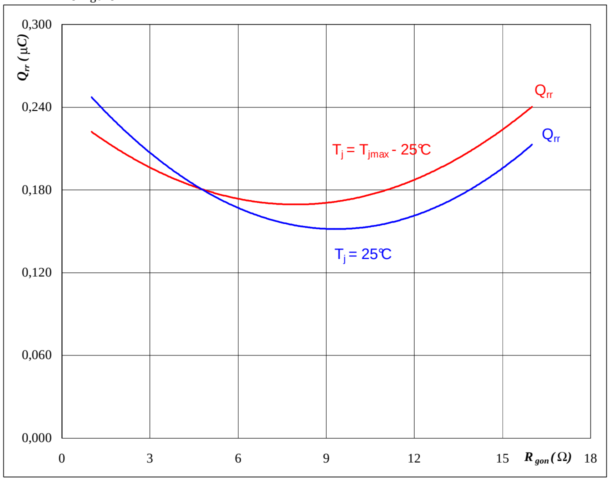


T_j =	25/125	°C
V_{DS} =	400	V
V_{GS} =	10	V
R_{gon} =	4	Ω

figure 14. FWD

Typical reverse recovery charge as a function of MOSFET turn on gate resistor

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

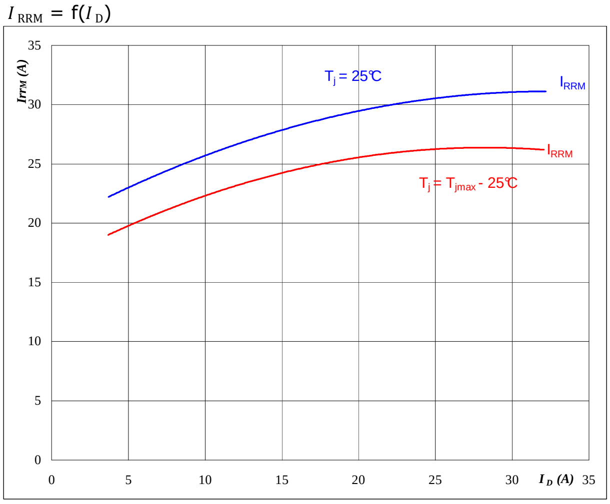


T_j =	25/125	°C
V_R =	400	V
I_F =	18	A
V_{GS} =	10	V

figure 15. FWD

Typical reverse recovery current as a function of drain current

$I_{RRM} = f(I_D)$

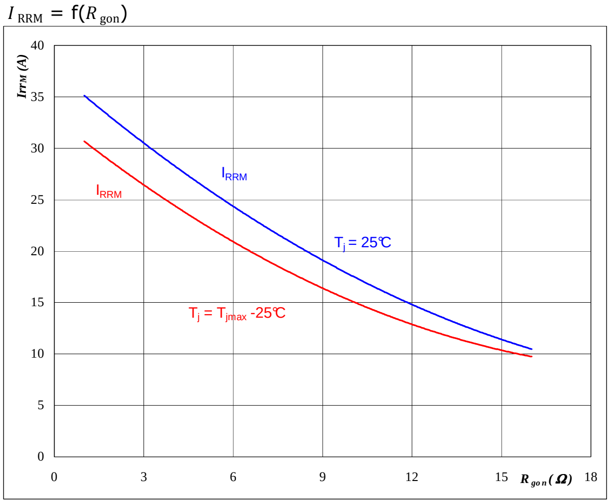


T_j =	25/125	°C
V_{DS} =	400	V
V_{GS} =	10	V
R_{gon} =	4	Ω

figure 16. FWD

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

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



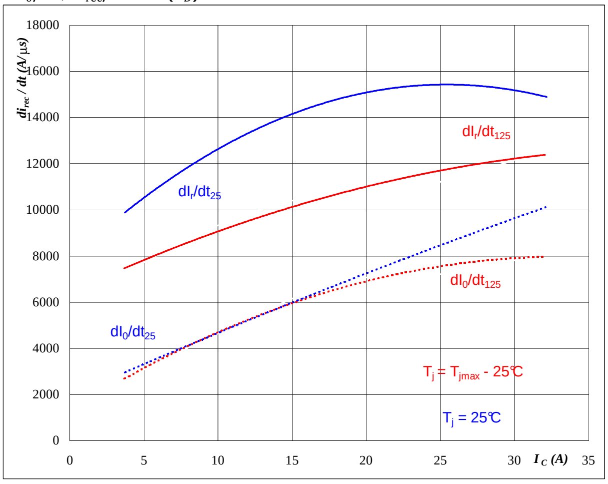
T_j =	25/125	°C
V_R =	400	V
I_F =	18	A
V_{GS} =	10	V

PFC

figure 17. **FWD**

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

$dI_0/dt, dI_{rec}/dt = f(I_D)$

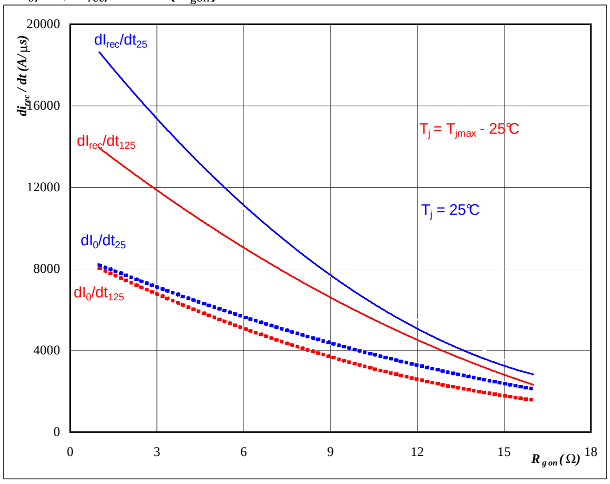


T_j =	25/125	°C
V_{DS} =	400	V
V_{GS} =	10	V
R_{gon} =	4	Ω

figure 18. **FWD**

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

$dI_0/dt, dI_{rec}/dt = f(R_{gon})$

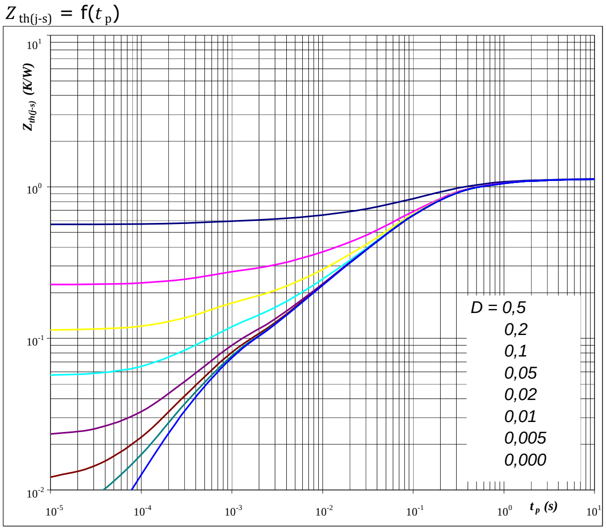


T_j =	25/125	°C
V_R =	400	V
I_F =	18	A
V_{GS} =	10	V

figure 19. **MOSFET**

MOSFET transient thermal impedance as a function of pulse width

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



D =	t_p / T	
$R_{th(j-s)}$ =	1,13	K/W

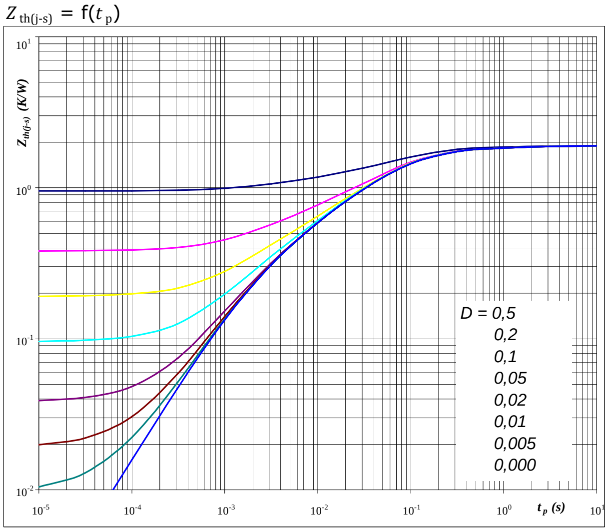
MOSFET thermal model values

R (K/W)	Tau (s)
2,60E-02	8,47E+00
1,27E-01	1,17E+00
5,44E-01	1,77E-01
2,66E-01	4,73E-02
1,07E-01	7,23E-03
6,20E-02	5,51E-04

figure 20. **FWD**

FWD transient thermal impedance as a function of pulse width

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



D =	t_p / T	
$R_{th(j-s)}$ =	1,90	K/W

FWD thermal model values

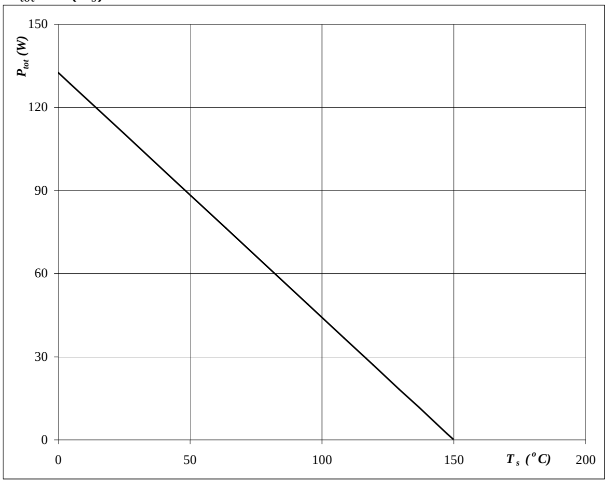
R (K/W)	Tau (s)
1,20E-01	2,23E+00
4,89E-01	2,82E-01
1,11E+00	6,57E-02
4,92E-01	1,17E-02
3,02E-01	2,09E-03
5,30E-02	2,12E-04

PFC

figure 21. **MOSFET**

Power dissipation as a function of heatsink temperature

$P_{tot} = f(T_s)$

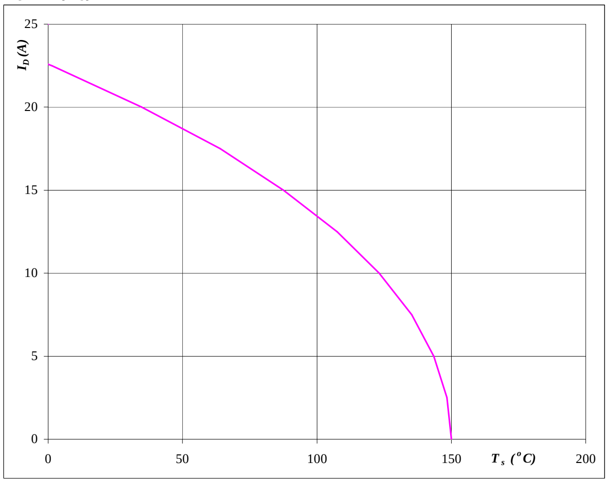


T_j = 150 ºC

figure 22. **MOSFET**

Drain current as a function of heatsink temperature

$I_C = f(T_s)$



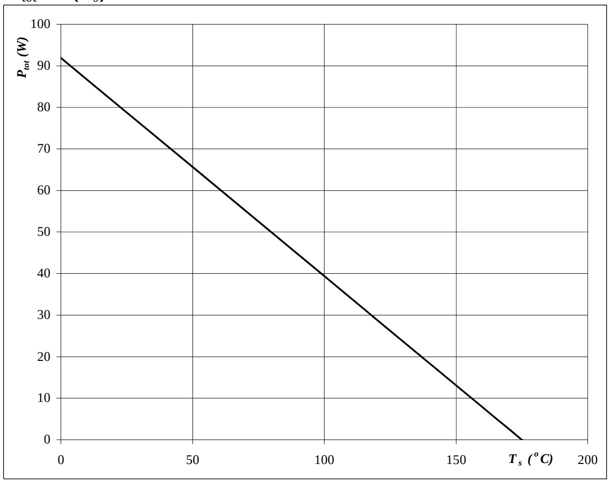
T_j = 150 ºC

V_{GS} = 10 V

figure 23. **FWD**

Power dissipation as a function of heatsink temperature

$P_{tot} = f(T_s)$

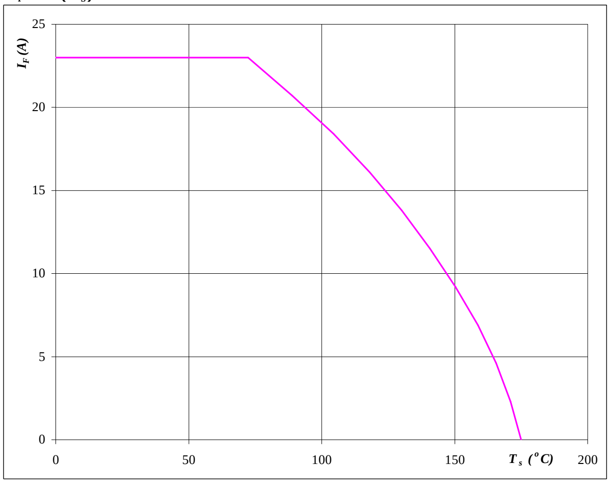


T_j = 175 ºC

figure 24. **FWD**

Forward current as a function of heatsink temperature

$I_F = f(T_s)$



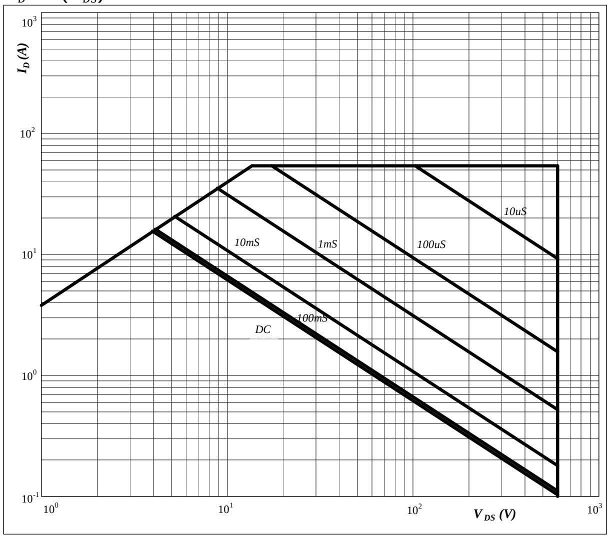
T_j = 175 ºC

PFC

figure 25.	MOSFET

Safe operating area as a function of drain-source voltage

$I_D = f(V_{DS})$

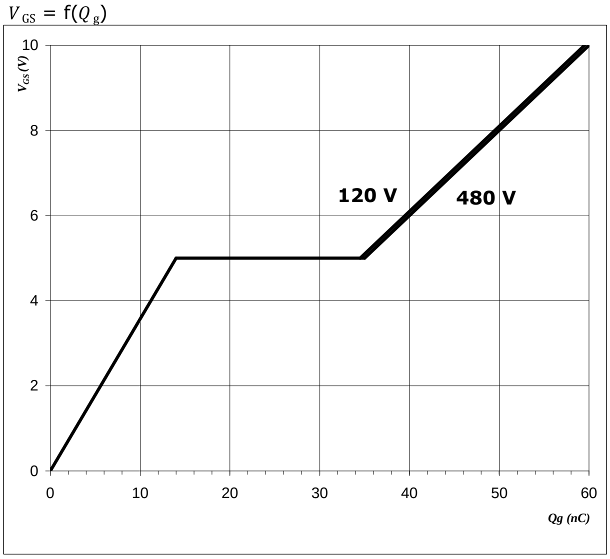


D =	single pulse	
T_s =	80	ºC
V_{GS} =	10	V
T_j =	T_{jmax}	

figure 26.	MOSFET

Gate voltage vs Gate charge

$V_{GS} = f(Q_g)$



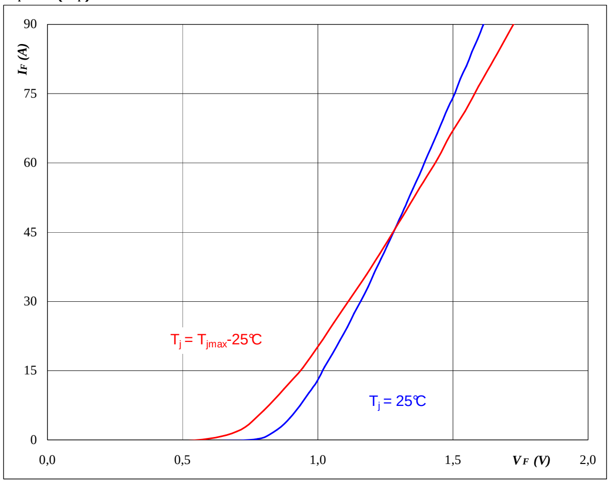
I_D =	18	A

Rectifier Diode

figure 1. **Rectifier Diode**

Typical diode forward current as a function of forward voltage

$I_F = f(V_F)$

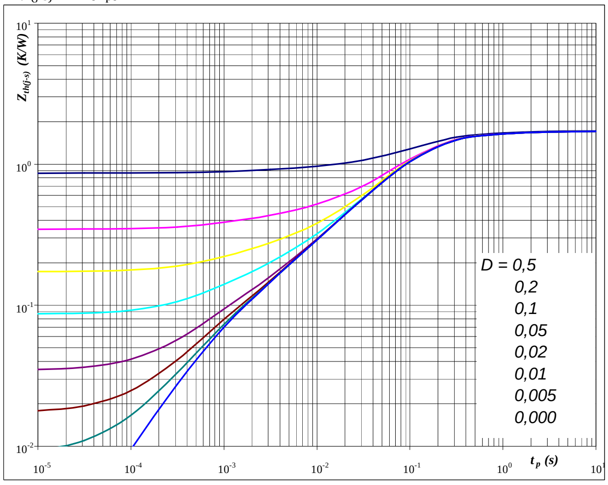


t_p = 250 µs

figure 2. **Rectifier Diode**

Diode transient thermal impedance as a function of pulse width

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



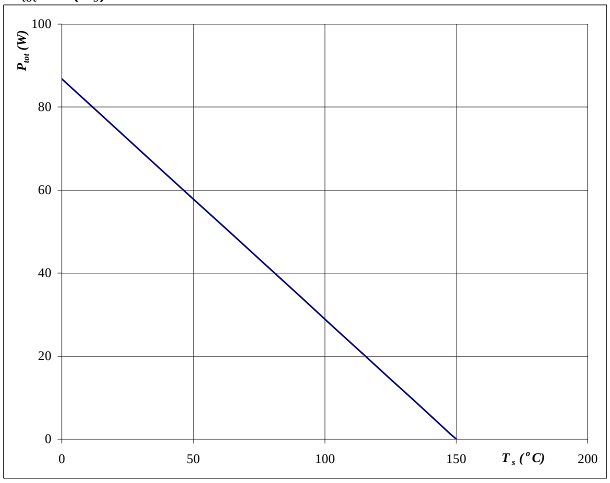
$D = t_p / T$

$R_{th(j-s)}$ = 1,73 K/W

figure 3. **Rectifier Diode**

Power dissipation as a function of heatsink temperature

$P_{tot} = f(T_s)$

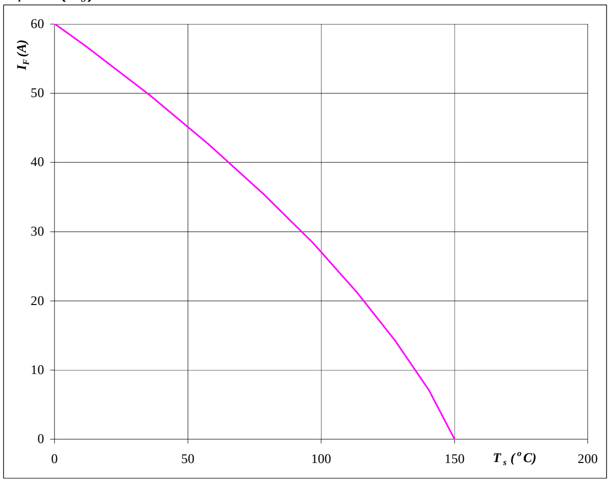


T_j = 150 ºC

figure 4. **Rectifier Diode**

Forward current as a function of heatsink temperature

$I_F = f(T_s)$



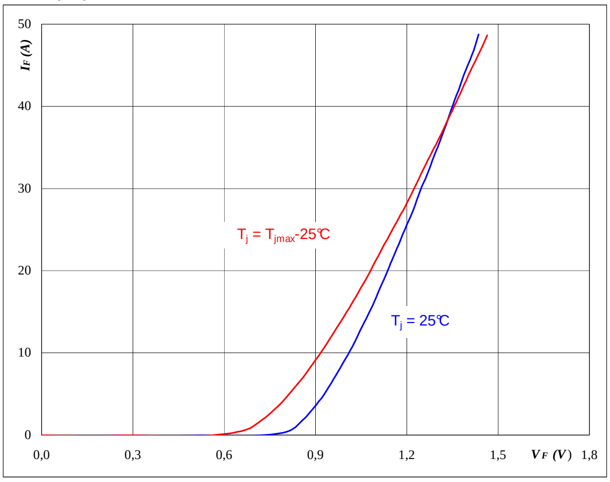
T_j = 150 ºC

Rectifier Thyristor

figure 1.	Thyristor

Typical thyristor forward current as a function of forward voltage

$I_F = f(V_F)$

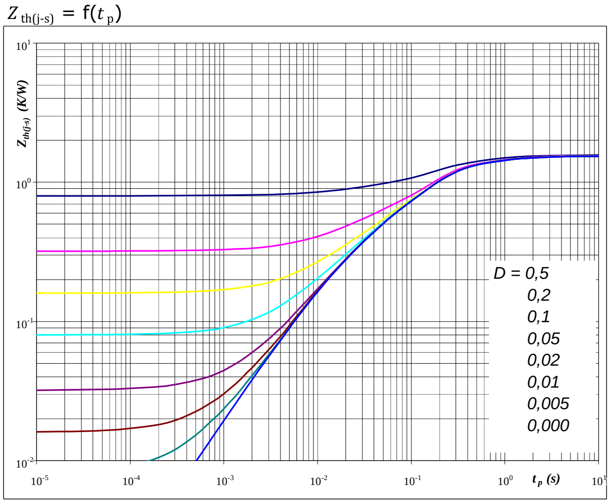


t_p = 250 µs

figure 2.	Thyristor

Thyristor transient thermal impedance as a function of pulse width

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



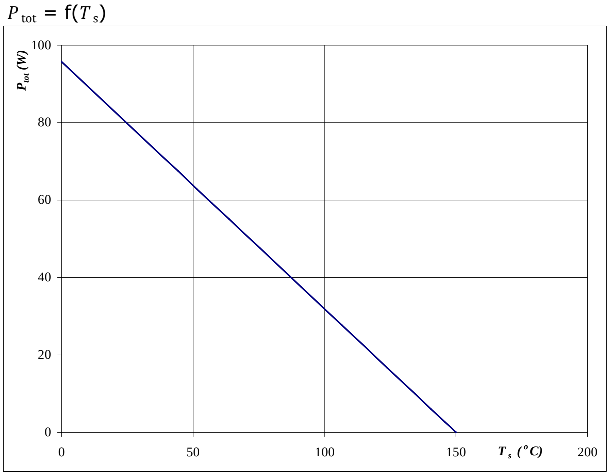
$D = t_p / T$

$R_{th(j-s)}$ = 1,57 K/W

figure 3.	Thyristor

Power dissipation as a function of heatsink temperature

$P_{tot} = f(T_s)$

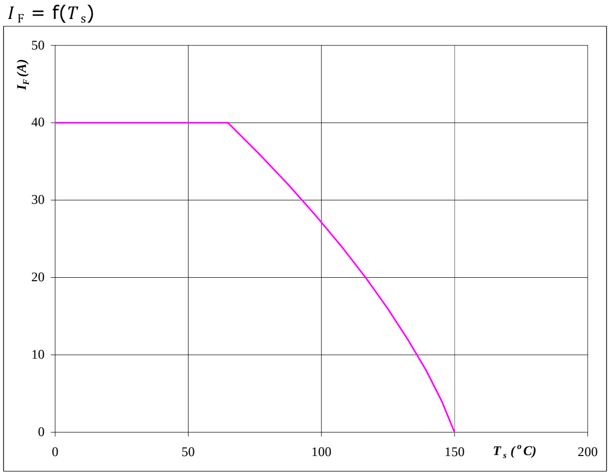


T_j = 150 ºC

figure 4.	Thyristor

Forward current as a function of heatsink temperature

$I_F = f(T_s)$

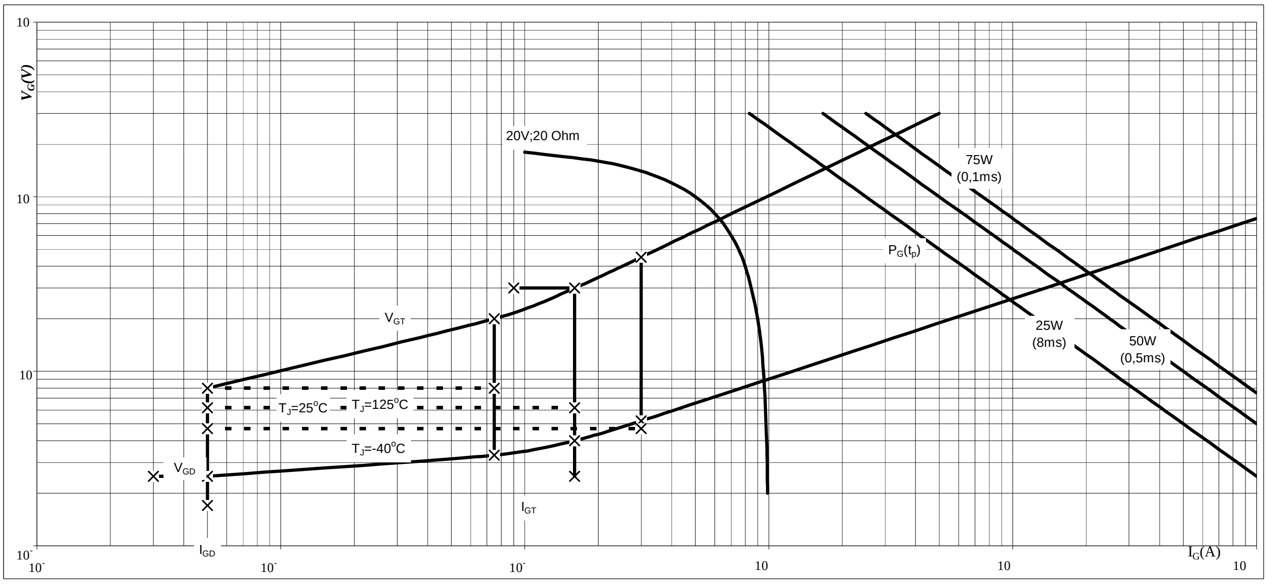


T_j = 150 ºC

Rectifier Thyristor

figure 5.	Thyristor

Gate trigger characteristics

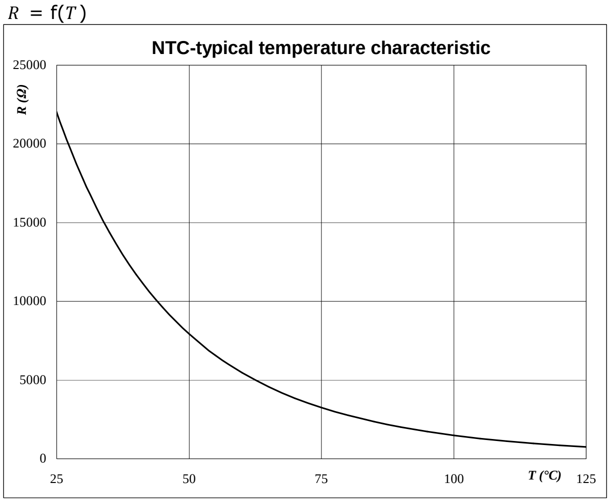


Thermistor

figure 1.	Thermistor

Typical NTC characteristic
as a function of temperature

R = f(T)



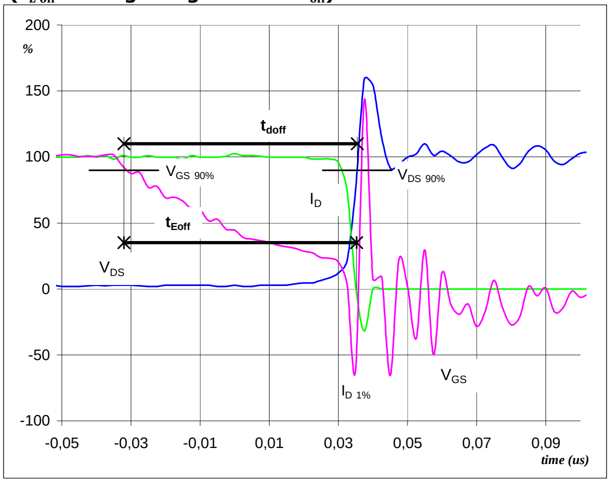
Switching Definitions PFC

General conditions

T_j	=	125 °C
R_{gon}	=	4 Ω
R_{goff}	=	4 Ω

figure 1. **MOSFET**

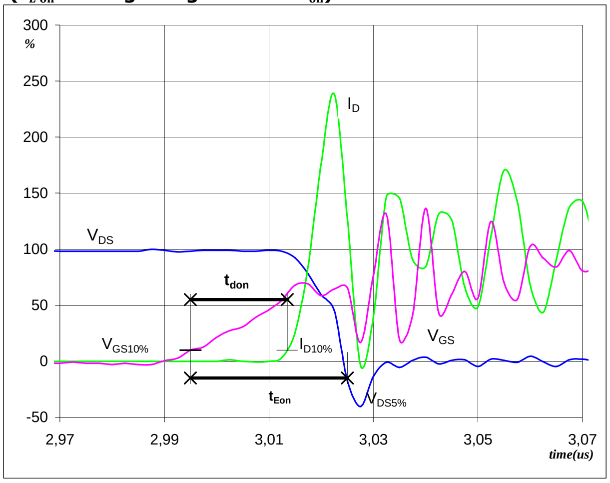
Turn-off Switching Waveforms & definition of t_{doff}, t_{Eoff}
($t_{E\,off}$ = integrating time for E_{off})



V_{GS} (0%) =	0	V
V_{GS} (100%) =	10	V
V_D (100%) =	400	V
I_D (100%) =	18	A
t_{doff} =	0,07	μs
$t_{E\,off}$ =	0,07	μs

figure 2. **MOSFET**

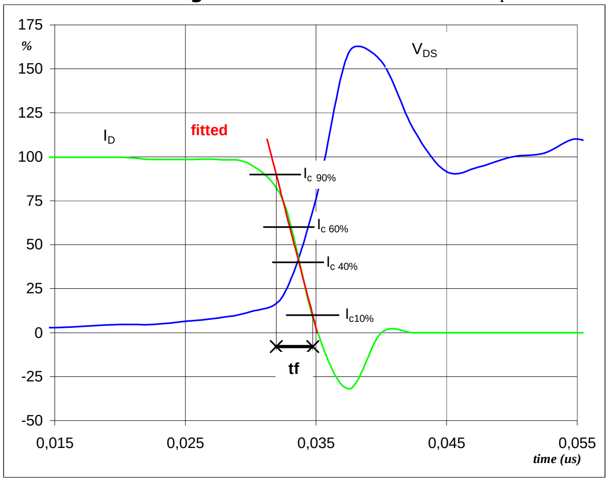
Turn-on Switching Waveforms & definition of t_{don}, t_{Eon}
($t_{E\,on}$ = integrating time for E_{on})



V_{GS} (0%) =	0	V
V_{GS} (100%) =	10	V
V_D (100%) =	400	V
I_D (100%) =	18	A
t_{don} =	0,02	μs
$t_{E\,on}$ =	0,03	μs

figure 3. **MOSFET**

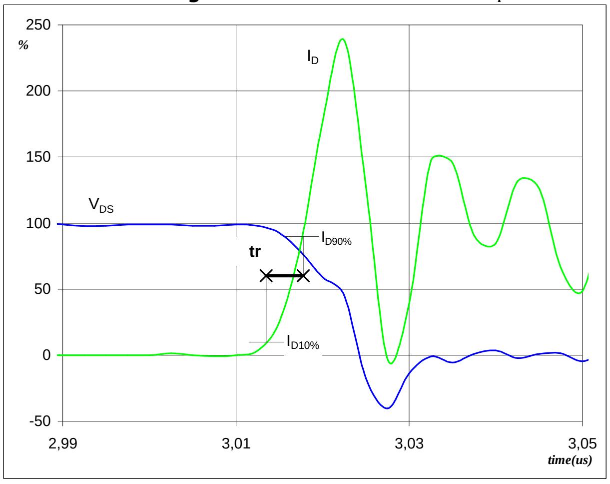
Turn-off Switching Waveforms & definition of t_f



V_D (100%) =	400	V
I_D (100%) =	18	A
t_f =	0,003	μs

figure 4. **MOSFET**

Turn-on Switching Waveforms & definition of t_r

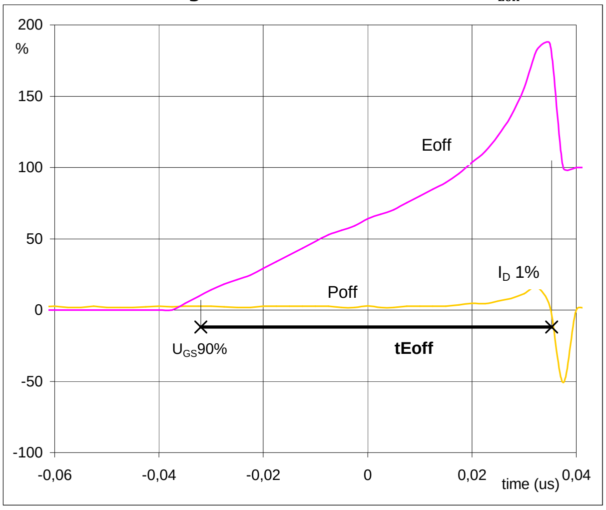


V_D (100%) =	400	V
I_D (100%) =	18	A
t_r =	0,004	μs

Switching Definitions PFC

figure 5. **MOSFET**

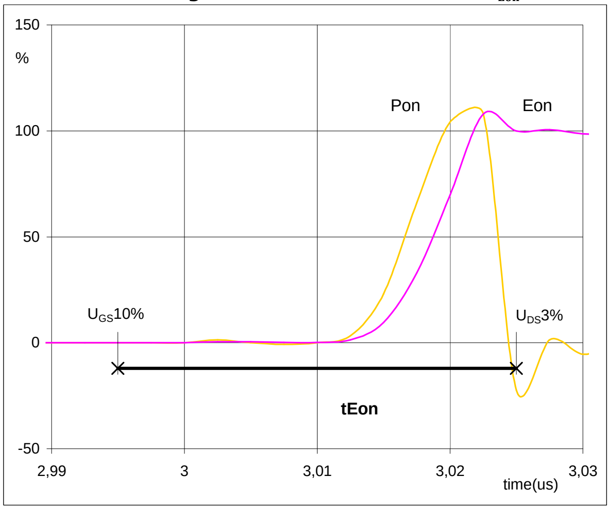
Turn-off Switching Waveforms & definition of t_{Eoff}



P_{off} (100%) =	7,22	kW
E_{off} (100%) =	0,02	mJ
$t_{E\,off}$ =	0,07	µs

figure 6. **MOSFET**

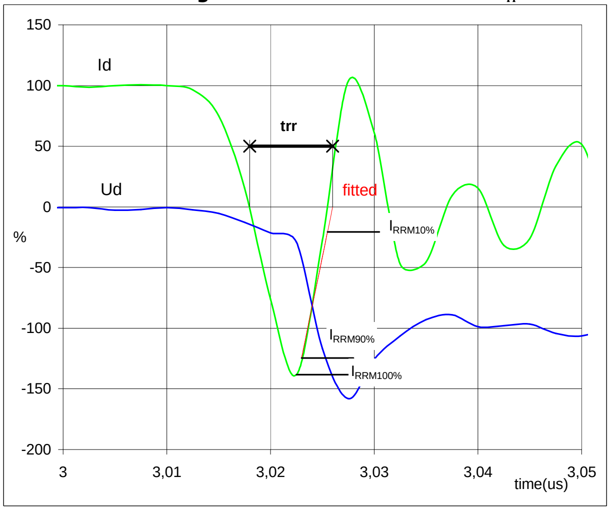
Turn-on Switching Waveforms & definition of t_{Eon}



P_{on} (100%) =	7,2156	kW
E_{on} (100%) =	0,05	mJ
$t_{E\,on}$ =	0,03	µs

figure 8. **FWD**

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

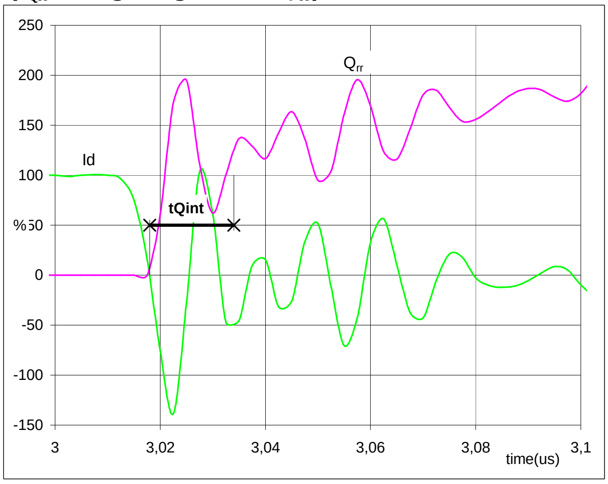


V_d (100%) =	400	V
I_d (100%) =	18	A
I_{RRM} (100%) =	-25	A
t_{rr} =	0,01	µs

Switching Definitions PFC

figure 9. **FWD**

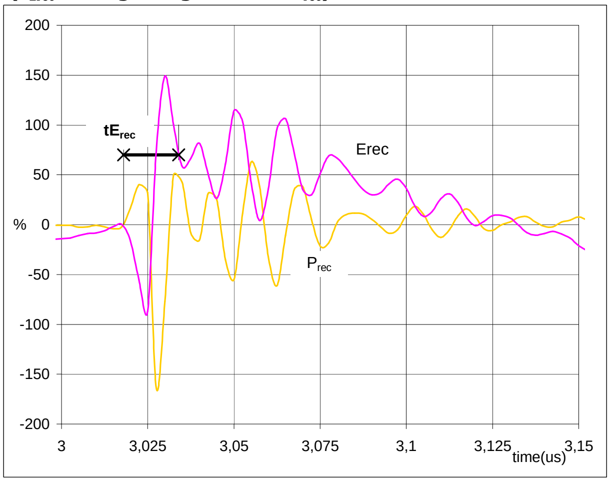
Turn-on Switching Waveforms & definition of t_{Qrr}
(t_{Qrr}= integrating time for Q_{rr})



I_d (100%) =	18	A
Q_{rr} (100%) =	0,18	μC
t_{Qint} =	0,02	μs

figure 10. **FWD**

Turn-on Switching Waveforms & definition of t_{Erec}
(t_{Erec}= integrating time for E_{rec})



P_{rec} (100%) =	7,22	kW
E_{rec} (100%) =	0,02	mJ
$t_{E\,rec}$ =	0,02	μs

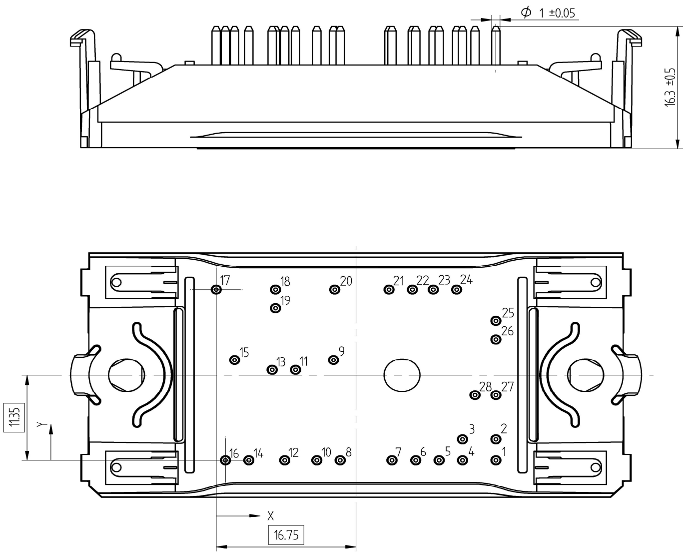
Ordering Code & Marking

Version	Ordering Code
with SCR, current sense in drain	10-FZ062TA099FH01-P980D28

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

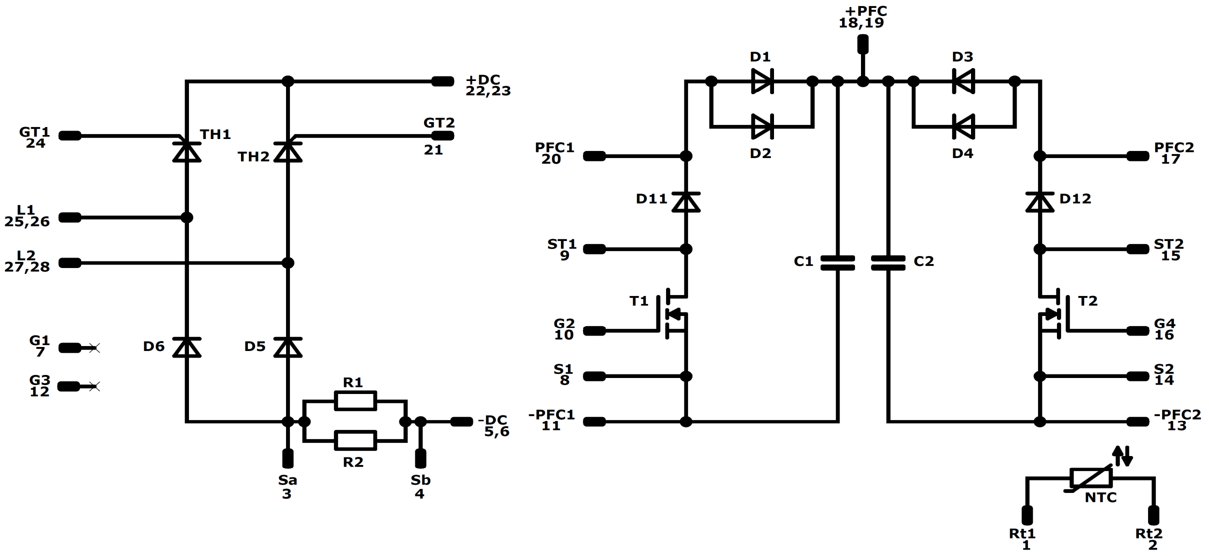
Outline

Pin table [mm]			
Pin	X	Y	Function
1	33,5	0	Rt1
2	33,5	2,8	Rt2
3	29,5	2,8	Sa
4	29,5	0	Sb
5	26,7	0	-DC
6	23,9	0	-DC
7	21,05	0	G1
8	14,85	0	S1
9	14,05	13,35	ST1
10	12,05	0	G2
11	9,5	12,05	-PFC1
12	8,2	0	G3
13	6,7	12,05	-PFC2
14	3,9	0	S2
15	2,2	13,35	ST2
16	1,1	0	G4
17	0	22,7	PFC2
18	7,1	22,7	+PFC
19	7,1	20,2	+PFC
20	14,2	22,7	PFC1
21	20,7	22,7	GT2
22	23,5	22,7	+DC
23	26	22,7	+DC
24	28,8	22,7	GT1
25	33,5	18,55	L1
26	33,5	16,05	L1
27	33,5	8,7	L2
28	31	8,7	L2



Tolerance of pinpositions: ±0,5mm at the end of pins
Dimension of coordinate axis is only offset without tolerance

Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T1, T2	MOSFET	600 V	99 mΩ	PFC Switch	
D1-D4	FWD	650 V	16 A	PFC Diode	for parallel devices
D11, D12	FWD	600 V	6 A	Current Transformer Prot. Diode	
D5, D6	FWD	1600 V	50 A	Rectifier Diode	
TH1, TH2	Thyristor	1200 V	44 A	Rectifier Thyristor	
R1, R2	Shunt			Shunt Resistor	for parallel devices
C1, C2	Capacitor	500 V		DC Link Capacitance	
NTC	NTC			Thermistor	

Packaging instruction					
Standard packaging quantity (SPQ)	**135**	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for *flow* 0 packages see vincotech.com website.

Package data
Package data for *flow* 0 packages see vincotech.com website.

UL recognition and file number
This device is certified according to UL 1557 standard, UL file number E192116. For more information see vincotech.com website.

Document No.:	Date:	Modification:	Pages
10-FZ062TA099FH01-P980D28-D5-14	21 Jul. 2017	PFC Diode values, new brand	