FAGOR

SURFACE MOUNT TRIAC

DPAK
(Plastic)

On-State Current	Gate Trigger Current
4 Amp	< 5 mA to < 35 mA

Off-State Voltage

200 V ÷ 600 V

This series of **TRIAC**s uses a high performance PNPN technology.

These devices are intended for AC control applications using surface mount technology.

The high commutation performances combined with high sensitivity, make them perfect in all applications like solid state relays, home appliances, power tools, small motor drives...

Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Min.	Max.	Unit
$I_{T(RMS)}$	RMS On-state Current	All Conduction Angle, T_C = 110 °C	4		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz	31		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz	30		A
I^2t	Fusing Current	t_p = 10 ms, Half Cycle	5.1		A^2s
I_{GM}	Peak Gate Current	20 µs max.		4	A
P_{GM}	Peak Gate Dissipation	20 µs max.		3	W
$P_{G(AV)}$	Gate Dissipation	20 ms max.		1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$ Tr ≤ 200 ns, F = 120 Hz T_j = 125 °C	50		A/µs
T_j	Operating Temperature			+125	°C
T_{stg}	Storage Temperature		-40	+150	°C
T_L	Lead Temperature for Soldering	4.5 mm from case, 10s max.	-40	260	°C

SYMBOL	PARAMETER	VOLTAGE			Unit
		B	D	M	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	200	400	600	V

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Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY 07	08	11	14	Unit
I_{GT} (1)	Gate Trigger Current	V_D = 12 V_{DC}, R_L = 30Ω, T_j = 25 °C	Q1÷Q3	MAX	5	10	25	35	mA
			Q4		7				mA
I_{DRM} / I_{RRM}	Off-State Leakage Current	V_R = V_{DRM}, T_j = 125 °C		MAX	1				mA
		V_R = V_{RRM}, T_j = 25 °C		MAX	5				µA
V_{to} (2)	Threshold Voltage	T_j = 125 °C		MAX	0.9				V
R_d (2)	Dynamic Resistance	T_j = 125 °C		MAX	120				mΩ
V_{TM} (2)	On-state Voltage	I_T = 5.5 Amp, tp = 380 µs, T_j = 25 °C		MAX	1.6				V
V_{GT}	Gate Trigger Voltage	V_D = 12 V_{DC}, R_L = 30Ω, T_j = 25 °C	Q1÷Q3	MAX	1.3				V
V_{GD}	Gate Non Trigger Voltage	V_D = V_{DRM}, R_L = 3.3KΩ, T_j = 125 °C	Q1÷Q3	MIN	0.2				V
I_H (2)	Holding Current	I_T = 100 mA, Gate open, T_j = 25 °C		MAX	10	15	25	35	mA
I_L	Latching Current	I_G = 1.2 I_{GT}, T_j = 25 °C	Q1,Q3	MAX	10	20	25	50	mA
			Q2	MAX	15	30	50	60	
dv / dt (2)	Critical Rate of Voltage Rise	V_D = 0.67 x V_{DRM}, Gate open, T_j = 125 °C		MIN	20	100	200	400	V/µs
(dI/dt)c (2)	Critical Rate of Current Rise	(dv/dt)c= 0.1 V/µs, T_j = 125 °C		MIN	1.8	2.7	4.4	-	A/ms
		(dv/dt)c= 10 V/µs, T_j = 125 °C		MIN	0.9	2.0	2.7	-	
		without snubber, Tj = 125 °C		MIN	-	-	-	2.5	
t_{gd}	Gate Controlled Delay Time	I_G = 2xI_{GT}, V_D = V_{DRM}, di_G/dt = 3 A/µs, I_{TM} = 5.5 A	Q1÷Q3	TYP	2				µs
$R_{th(j-c)}$	Thermal Resistance Junction-Case				2.6				°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient				70				°C/W

(1) Minimum I_{GT} is guaranted at 5% of I_{GT} max.
(2) For either polarity of electrode MT2 voltage with reference to electrode MT1.

PART NUMBER INFORMATION

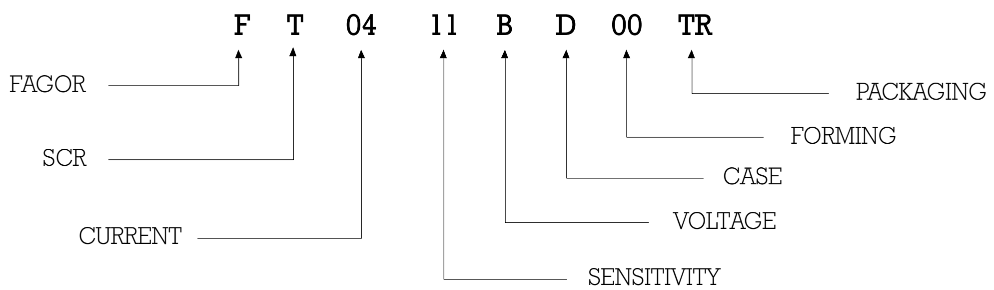

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Fig. 1: Maximum power dissipation versus RMS on-state current

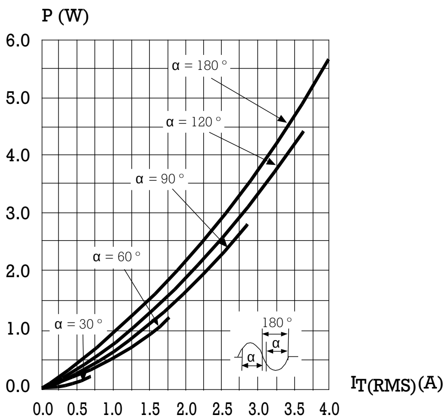

Fig. 2: Correlation between maximum power dissipation and maximum allowable temperatures (Tamb and Tcase) for different thermal resistances heatsink + contact.

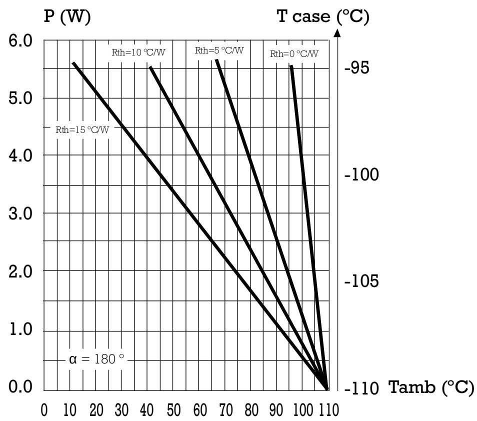

Fig. 3: RMS on-state current versus ambient temperature

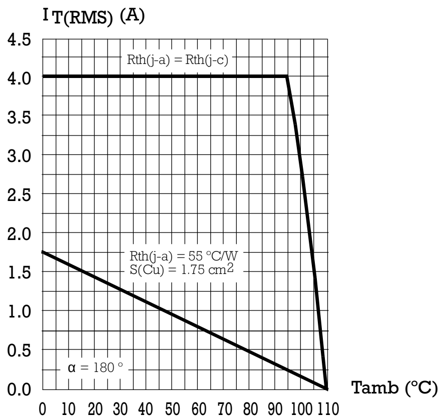

Fig. 4: Relative variation of thermal impedance junction to case versus pulse duration.

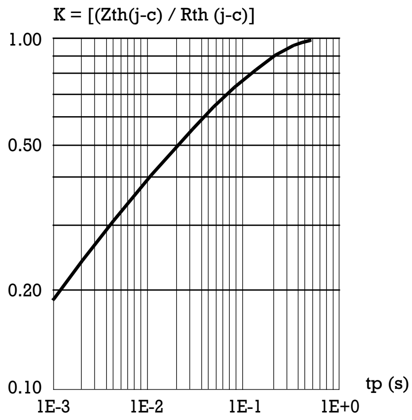

Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature (typical values).

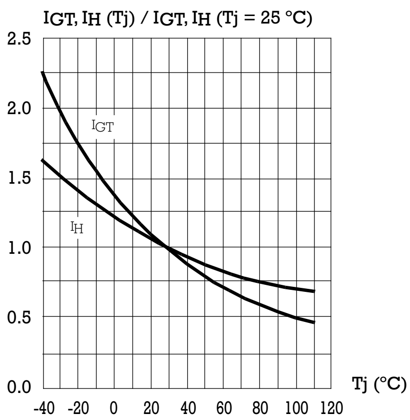

Fig. 6: Non repetitive surge peak on-state current versus number of cycles.

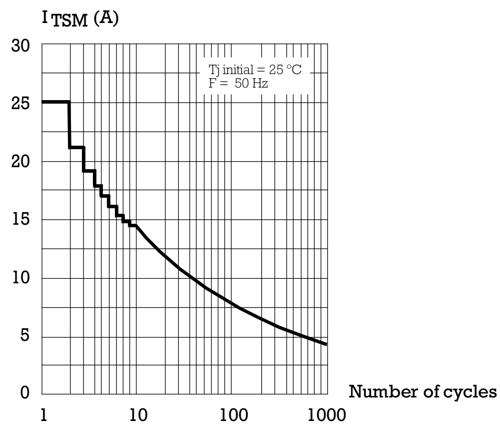

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Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp ≤ 10 ms, and corresponding value of I²t.

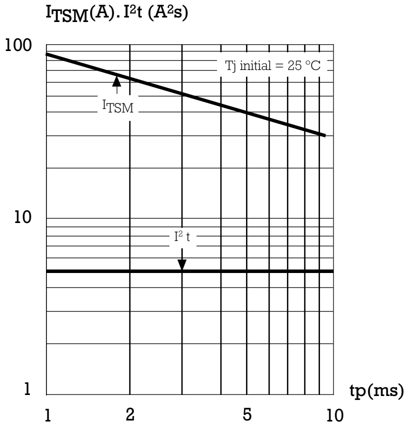


Fig. 8: On-state characteristics (maximum values).

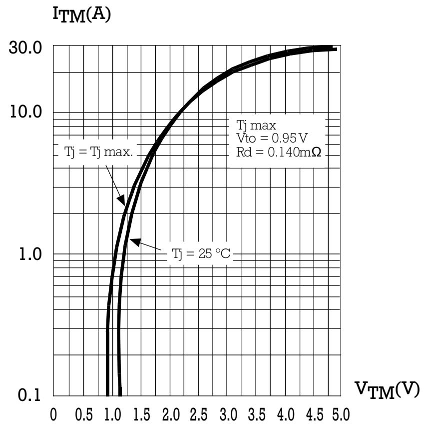
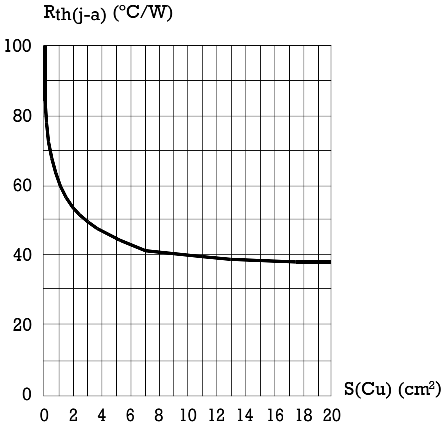


Fig. 9: Thermal resistance junction to ambient versus copper surface under tab (Epoxy printed circuit board FR4, copper thickness: 35 µm).



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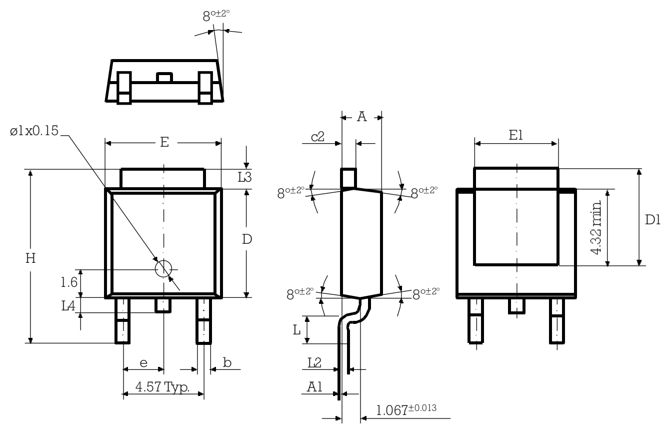
PACKAGE MECHANICAL DATA DPAK TO 252-AA



REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	2.18	2.3±0.18	2.39
A1	0	0.12	0.127
b	0.64	0.75±0.1	0.89
c	0.46		0.61
c1	0.46		0.56
c2		0.8±0.013	
D	5.97	6.1±0.1	6.22
D1	5.21		5.52
E	6.35	6.58±0.14	6.73
E1	5.20	5.36±0.1	5.46
e		2.28BSC	
H	9.40	9.90±0.15	10.41
L	1.40		1.78
L1	2.55	2.6±0.05	2.74
L2	0.46	0.5±0.013	0.58
L3	0.89	1.20±0.05	1.27
L4	0.64	0.83±0.1	1.02

Marking: type number
Weight: 0.2 g

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