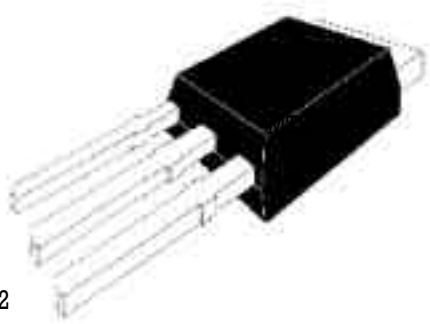
HIGH COMMUTATION TRIAC

IPAK
(Plastic)



MT1
MT2
G

On-State Current
8 Amp

Gate Trigger Current
< 25 mA to < 50 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	8		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz	84		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz	80		A
I^2t	Fusing Current	t_p = 10 ms, Half Cycle	36		A^2s
I_{GM}	Peak Gate Current	20 µs max.		4	A
P_{GM}	Peak Gate Dissipation	20 µs max.		10	W
$P_{G(AV)}$	Gate Dissipation	20 ms max.		1	W
di/dt	Critical rate of rise of on-state current	I_G = 2 x I_{GT} Tr ≤ 100 ns, F = 120 Hz T_j = 125 °C	20		A/µs
T_j	Operating Temperature Range		-40	+125	°C
T_{stg}	Storage Temperature Range		-40	+150	°C
T_L	Lead Temperature for soldering	10s max.		260	°C

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

HIGH COMMUTATION TRIAC

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY			Unit
					11	14	16	
I_{GT}	Gate Trigger Current	V_D = 12 V_{DC}, R_L = 33Ω T_j = 25 °C	Q1÷Q3	MAX	25	35	50	mA
I_{DRM} /I_{RRM}	Off-State Leakage Current	V_R = V_{DRM}, T_j = 125 °C V_R = V_{RRM}, T_j = 25 °C		MAX MAX	1 5			mA µA
V_{TM}*	On-state Voltage	I_T = 11 Amp, tp = 380 µs, T_j = 25 °C		MAX	1.55			V
V_{GT}	Gate Trigger Voltage	V_D = 12 V_{DC}, R_L = 33Ω, 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*	Holding Current	I_T = 100 mA, Gate open, T_j = 25 °C		MAX	25	35	50	mA
I_L	Latching Current	I_G = 1.2 I_{GT}, T_j = 25 °C	Q1,Q3 Q2	MAX MAX	25 50	50 60	80 80	mA
dv / dt*	Critical Rate of Voltage Rise	V_D = 0.67 x V_{DRM}, Gate open T_j = 125 °C		MIN	200	400	1000	V/µs
(di/dt)c*	Critical Rate of Current Rise	(dv/dt)c= 0.1 V/µs T_j = 125 °C (dv/dt)c= 15 V/µs T_j = 125 °C without snubber Tj = 125 °C		MIN MIN MIN	9 4.5	9 4.5	 4.5	A/ms
$R_{th(j-c)}$	Thermal Resistance Junction-Case				1.6			°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient				100			°C/W

(*) For either polarity of electrode MT2 voltage with reference to electrode MT1.

PART NUMBER INFORMATION

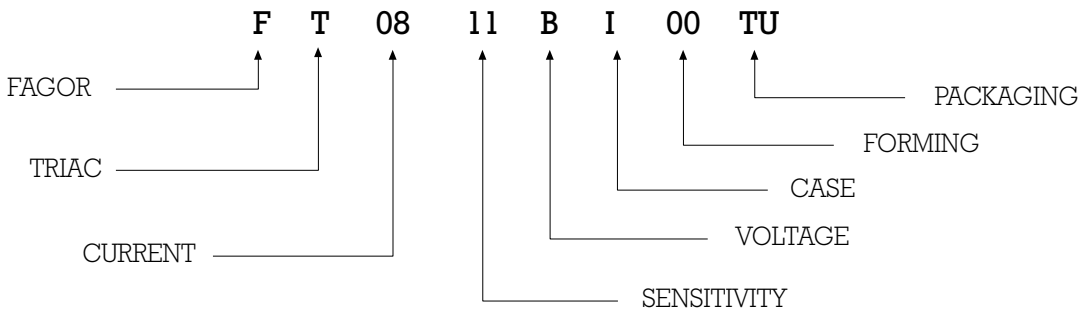


Fig. 1: Maximum power dissipation versus average on-state current

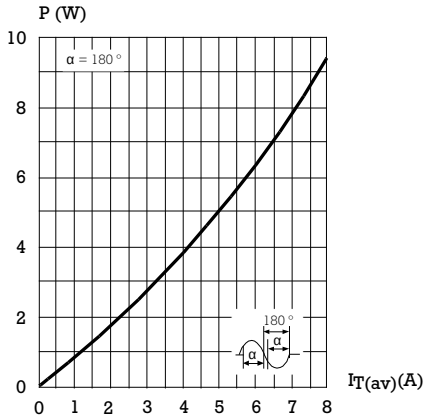


Fig. 2: Average and DC on-state current versus case temperature

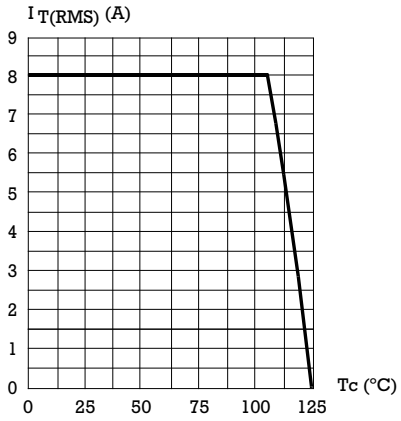


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration

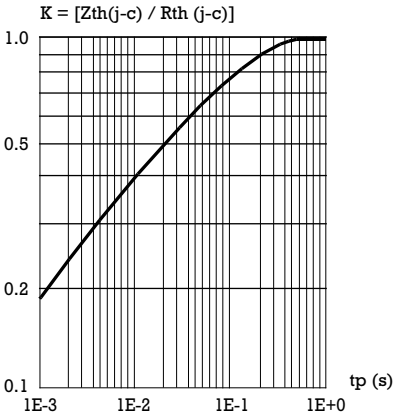


Fig. 4: Relative variation of gate trigger current and holding current versus junction temperature

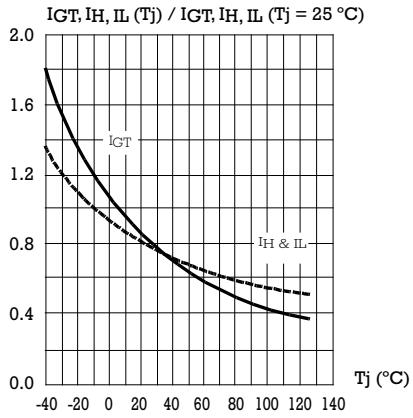


Fig. 5: Non repetitive surge peak on-state current versus number of cycles

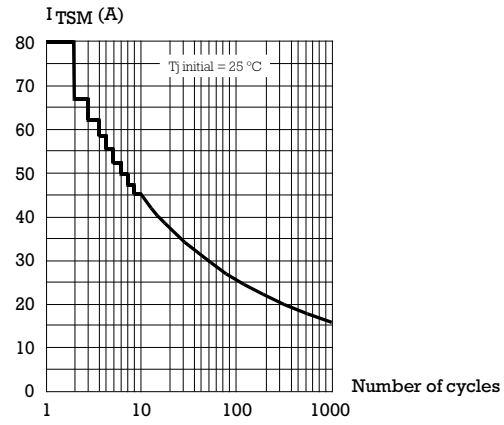


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp < 10 ms, and corresponding value of I^2t.

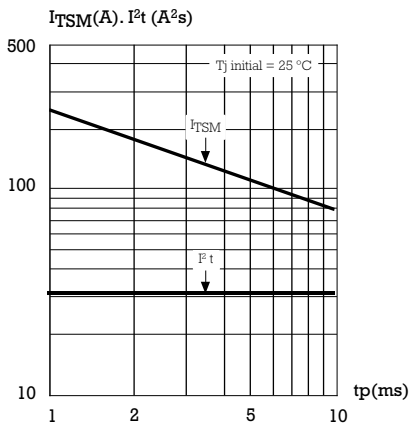
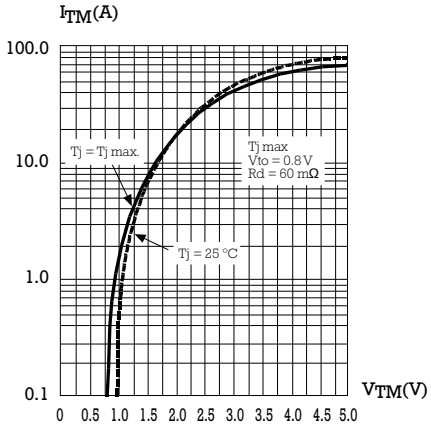
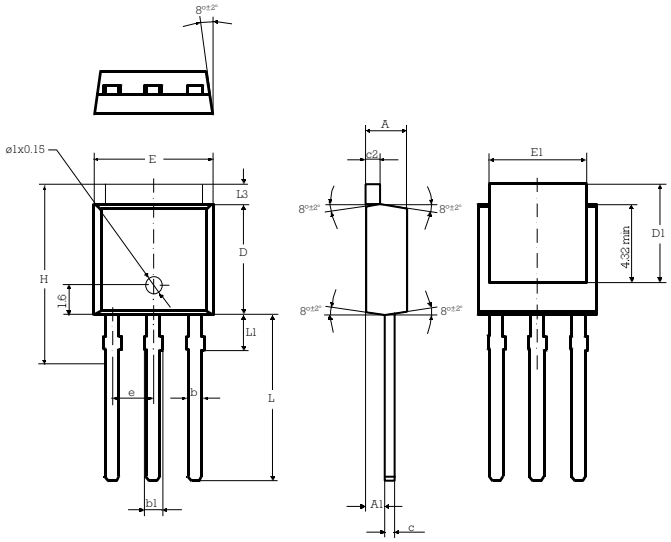


Fig. 8: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA IPAK TO 251-AA



REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	2.19	2.3±0.08	2.38
A1	0.89	1.067±0.01	1.14
b	0.64	0.75±0.1	0.89
b1	0.76	0.95	1.14
c	0.46		0.58
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	5.21	5.36±0.1	5.46
e		2.28BSC	
L	8.89	9.2±0.2	9.65
L1	1.91	2±0.1	2.28
L3	0.89		1.27

Marking: type number
Weight: 0.2 g