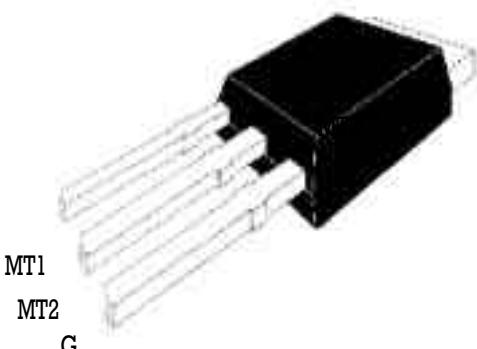


LOGIC LEVEL TRIAC

IPAK (Plastic) 	On-State Current 4 Amp	Gate Trigger Current < 5 mA to < 10 mA
	Off-State Voltage 200 V ÷ 600 V	
<p>This series of TRIACs uses a high performance PNPN technology.</p> <p>These parts are intended for general purpose applications where logic compatible gate sensitivity is required, like touch dimmers, fan, electrovalve control.</p>		

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, $T_c = 110^\circ C$	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	$t_p = 10 \text{ ms, Half Cycle}$	5.1		A ² s
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	$I_G = 2 \times I_{GT} \text{ Tr } 100 \text{ ns, F } = 120 \text{ Hz}$ $T_j = 125^\circ C$	50		A/ μs
T_j	Operating Temperature		-40	+125	°C
T_{stg}	Storage Temperature		-40	+150	°C
T_{sld}	Soldering Temperature	4.5 mm from case, 10s max.		260	°C

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

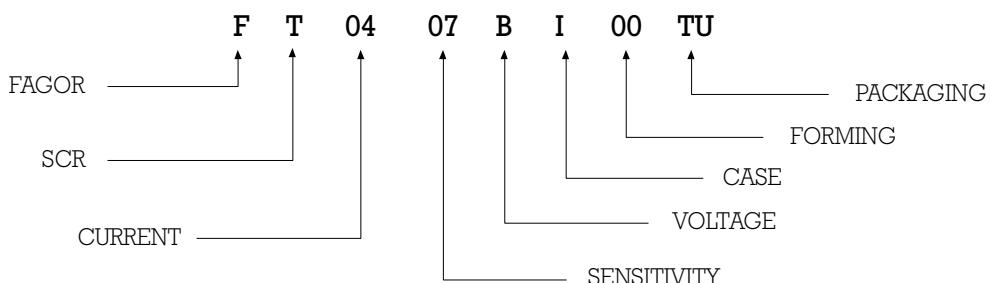
LOGIC LEVEL TRIAC

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant	SENSITIVITY		Unit
				07	08	
I_{GT}	Gate Trigger Current	$V_D = 12 \text{ V}_{DC}$, $R_L = 30 \Omega$, $T_j = 25^\circ\text{C}$	Q1÷Q3 Q4	MAX MAX	5 7	mA
I_{DRM} / I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}$, $T_j = 125^\circ\text{C}$ $V_R = V_{RRM}$, $T_j = 25^\circ\text{C}$		MAX MAX	1 5	mA μA
V_{to}	Threshold Voltage	$T_j = 125^\circ\text{C}$		MAX	0.9	V
R_d	Dynamic Resistance	$T_j = 125^\circ\text{C}$		MAX	120	m
V_{TM}^*	On-state Voltage	$I_T = 5.5 \text{ Amp}$, $t_p = 380 \mu\text{s}$, $T_j = 25^\circ\text{C}$		MAX	1.6	V
V_{GT}	Gate Trigger Voltage	$V_D = 12 \text{ V}_{DC}$, $R_L = 30 \Omega$, $T_j = 25^\circ\text{C}$	Q1÷Q3	MAX	1.3	V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}$, $R_L = 3.3\text{K}$, $T_j = 125^\circ\text{C}$	Q1÷Q3	MIN	0.2	V
I_H^*	Holding Current	$I_T = 100 \text{ mA}$, Gate Open $T_j = 25^\circ\text{C}$		MAX	10 15	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}$, $T_j = 25^\circ\text{C}$	Q1,Q3,Q4 Q2	MAX MAX	10 15 20 30	mA
dv / dt^*	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}$, Gate open $T_j = 125^\circ\text{C}$		MIN	20 100	V/ μs
$R_{th(j-c)}$	Thermal Resistance Junction-Case for AC				2.6	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient				100	$^\circ\text{C}/\text{W}$

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

PART NUMBER INFORMATION



LOGIC LEVEL TRIAC

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

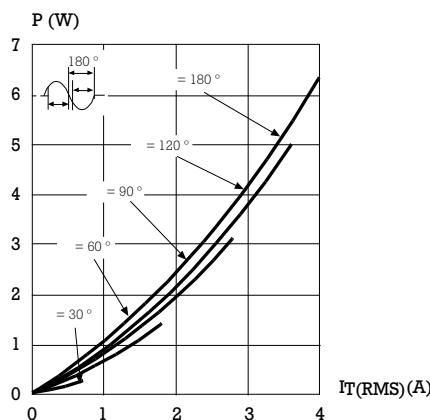


Fig. 3: RMS on-state current versus case temperature.

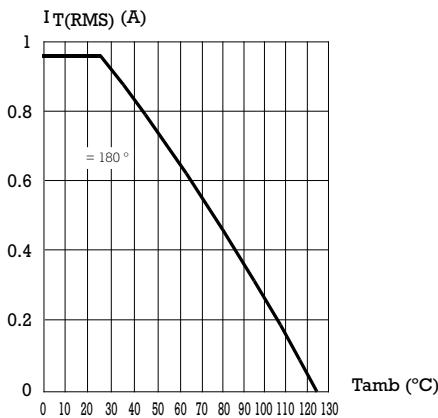


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

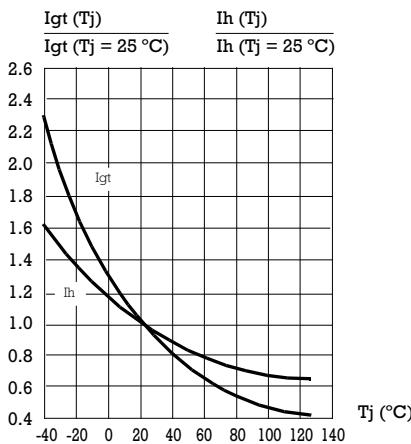


Fig. 2: Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and T case).

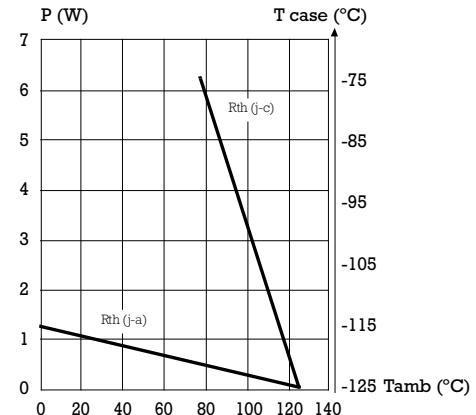


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

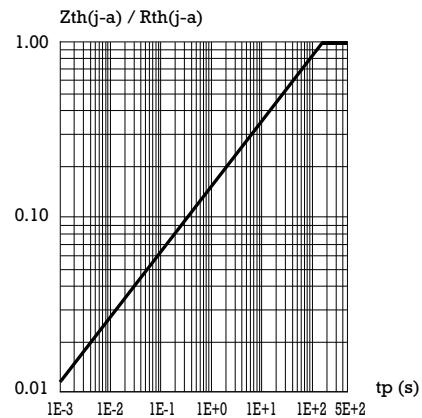
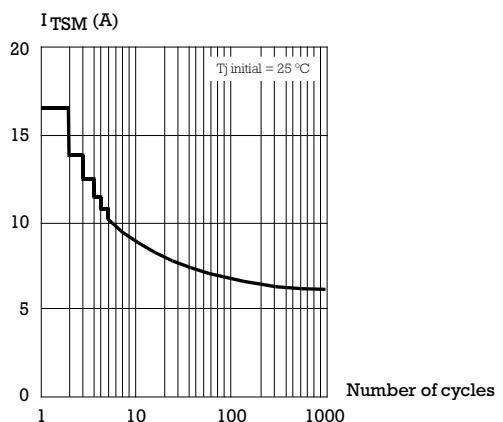


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



LOGIC LEVEL TRIAC

Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p = 10 \text{ ms}$, and corresponding value of $I^2 t$.

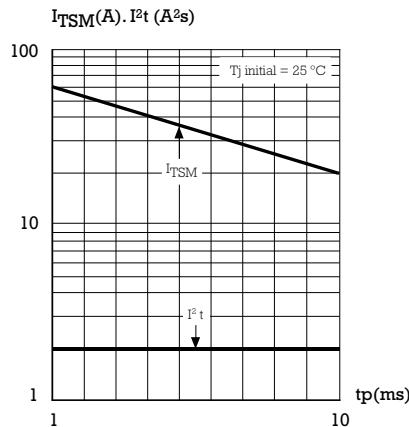
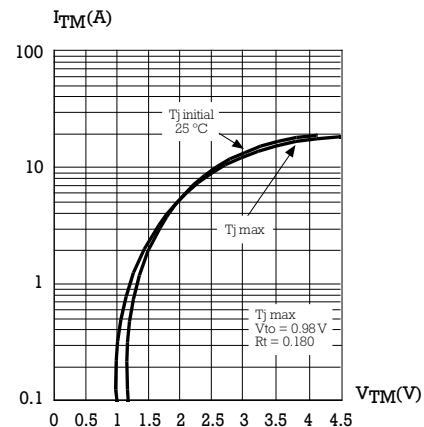


Fig. 8: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA IPAK TO 251-AA

<img alt="Mechanical drawing of the IPAK TO 251-AA package showing top view and side cross-section with dimensions labeled: A, Al, b, b1, c, c2, D, D1, E, E1, L, L1, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L34, L35, L36, L37, L38, L39, L40, L41, L42, L43, L44, L45, L46, L47, L48, L49, L50, L51, L52, L53, L54, L55, L56, L57, L58, L59, L60, L61, L62, L63, L64, L65, L66, L67, L68, L69, L70, L71, L72, L73, L74, L75, L76, L77, L78, L79, L80, L81, L82, L83, L84, L85, L86, L87, L88, L89, L90, L91, L92, L93, L94, L95, L96, L97, L98, L99, L100, L101, L102, L103, L104, L105, L106, L107, L108, L109, L110, L111, L112, L113, L114, L115, L116, L117, L118, L119, L120, L121, L122, L123, L124, L125, L126, L127, L128, L129, L130, L131, L132, L133, L134, L135, L136, L137, L138, L139, L140, L141, L142, L143, L144, L145, L146, L147, L148, L149, L150, L151, L152, L153, L154, L155, L156, L157, L158, 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