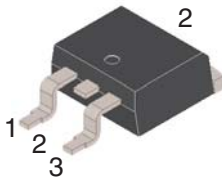
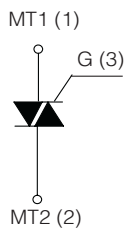




LOGIC LEVEL TRIAC

<p style="text-align: center; font-weight: bold; font-size: 1.2em;">TO-263AB / D2PAK</p> <div style="text-align: center; margin: 20px 0;">  </div> <div style="text-align: center; margin: 20px 0;">  </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>On-State Current 8 Amp</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Gate Trigger Current ≤ 10 mA (09) ≤ 7 mA (07) ≤ 5 mA (04)</p> </td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;"> <p>Off-State Voltage 200 V ÷ 800 V</p> </td> </tr> </table> <hr/> <p>FEATURES</p> <ul style="list-style-type: none"> Glass/passivated die junctions Medium current Triac Ideal for automated placement Low thermal resistance High surge current capability Low forward voltage drop Solder dip 260°C, 10s Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC Meets MSL level 3, per J-STD-020, LF maximum peak of 260° C <div style="text-align: right; margin-top: 10px;">   RoHS COMPLIANT </div> <hr/> <p>MECHANICAL DATA</p> <ul style="list-style-type: none"> Case: TO-263AB / D2PAK. Epoxy meets UL 94V-0 flammability rating. Polarity: As marked on the body. Terminals: Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test. <hr/> <p>TYPICAL APPLICATIONS</p> <p>Logic level versions are designed to interface directly with low power drivers such as microcontrollers.</p>	<p>On-State Current 8 Amp</p>	<p>Gate Trigger Current ≤ 10 mA (09) ≤ 7 mA (07) ≤ 5 mA (04)</p>	<p>Off-State Voltage 200 V ÷ 800 V</p>	
<p>On-State Current 8 Amp</p>	<p>Gate Trigger Current ≤ 10 mA (09) ≤ 7 mA (07) ≤ 5 mA (04)</p>				
<p>Off-State Voltage 200 V ÷ 800 V</p>					

Maximun Ratings and Electrical Characteristics at 25°C

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	RMS On-state Current (full sine wave)	All Conduction Angle, $T_c = 95^\circ C$	8	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7$ ms)	88	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20$ ms)	80	A
I^2t	Fusing Current	$t_p = 10$ ms, Half Cycle	32	A ² s
I_{GM}	Peak Gate Current	20 μ s max. $T_j = 125^\circ C$	4	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125^\circ C$	1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$, $t_r \leq 100$ ns $f = 120$ Hz, $T_j = 125^\circ C$	50	A/ μ s
T_j	Operating Temperature		(-40 +125)	°C
T_{stg}	Storage Temperature		(-40 +150)	°C
T_{sld}	Soldering Temperature	10s max	260	°C

SYMBOL	PARAMETER	VOLTAGE					Unit
		B	D	M	S	N	
V_{DRM}/V_{RRM}	Repetitive Peak Off State Voltage	200	400	600	700	800	V

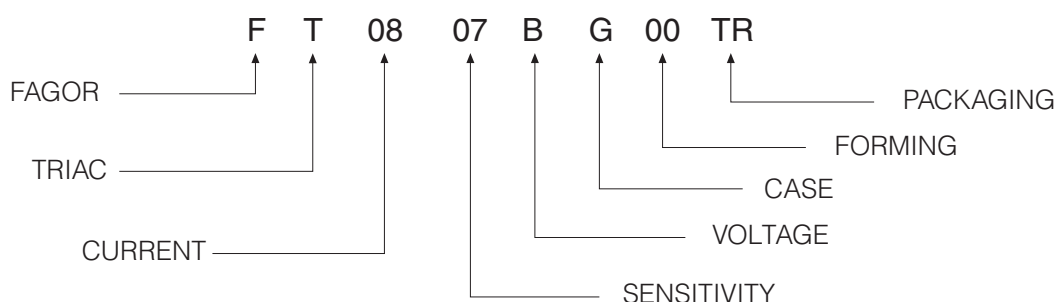
LOGIC LEVEL TRIAC
Electrical Characteristics at Tamb = 25 °C

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY			Unit
					04 *	07	09	
I _{GT} ⁽¹⁾	Gate Trigger Current	V _D = 12 V _{DC} , R _L = 33Ω, T _j = 25 °C	Q1÷Q3	MAX	5	5	10	mA
			Q4	MAX	-	7	10	mA
V _{GT}	Gate Trigger Voltage	V _D = 12 V _{DC} , R _L = 33Ω, T _j = 25 °C	Q1÷Q3	MAX	1.3			V
			Q1÷Q4	MAX	1.3			V
V _{GD}	Gate Non Trigger Voltage	V _D = V _{DRM} , R _L = 3.3 KΩ, T _j = 125 °C	Q1÷Q3	MIN	0.2			V
			Q1÷Q4	MIN	0.2			V
I _H ⁽²⁾	Holding Current	I _T = 100 mA, Gate open, T _j = 25 °C		MAX	15	15	20	mA
I _L	Latching Current	I _G = 1.2 I _{GT} , T _j = 25 °C	Q1,Q3	MAX	25	-	-	mA
			Q1, Q3, Q4	MAX	-	20	20	mA
			Q2	MAX	30	30	25	mA
dV/dt ⁽²⁾	Critical Rate of Voltage Rise	V _D = 0.67 x V _{DRM} , Gate open T _j = 125 °C		MIN	40	20	40	V/μs
(dI/dt) _c ⁽²⁾	Critical Rate of Current Rise	(dv/dt) _c = 0.1 V/μs T _j = 125 °C		MIN	5.4	1.8	2.5	A/ms
		(dv/dt) _c = 10 V/μs T _j = 125 °C		MIN	2.8	0.9	1.5	A/ms
		without snubber T _j = 125 °C		MIN	-	-	-	
V _{TM} ⁽²⁾	On-state Voltage	I _T = 11 Amp, t _p = 380 μs, T _j = 25 °C		MAX	1.6			V
V _{t(o)} ⁽²⁾	Threshold Voltage	T _j = 125 °C		MAX	0.85			V
r _d ⁽²⁾	Dynamic resistance	T _j = 125 °C		MAX	90			mΩ
I _{DRM} /I _{RRM}	Off-State Leakage Current	V _D = V _{DRM} , T _j = 125 °C		MAX	1			mA
		V _R = V _{RRM} , T _j = 25 °C		MAX	5			μA
R _{th(j-c)}	Thermal Resistance Junction-Case	for AC 360° conduction angle			1.6			°C/W
R _{th(j-a)}	Thermal Resistance Junction-Ambient	S = 1 cm ²			45			°C/W

(1) Minimum I_{GT} is guaranteed at 5% of I_{GT} max.

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

* Sensitivity group 04 maximum V_{drm}: 600V.

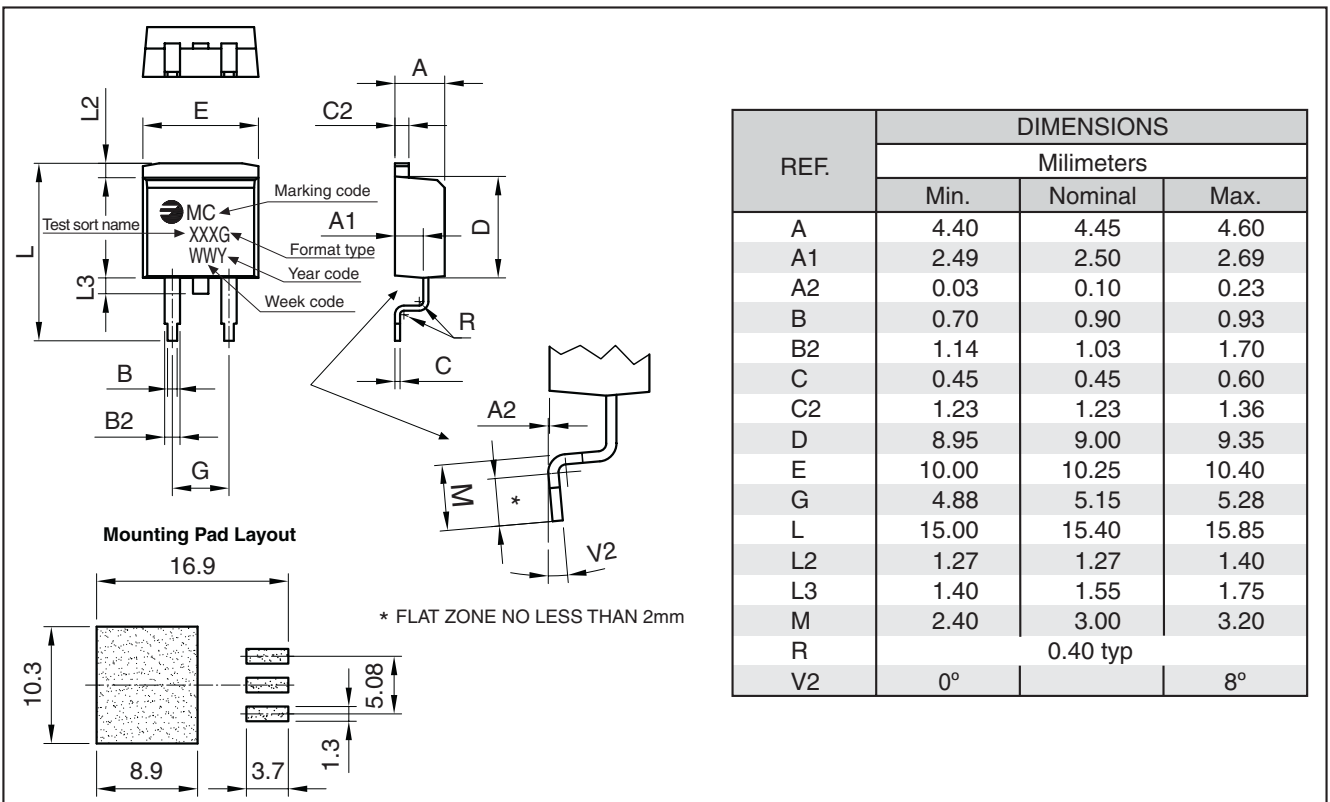
Part Number Information


LOGIC LEVEL TRIAC

Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
FT0809MG 00TR	TR	13" diameter tape and reel	800	1.50

Package Outline Dimensions: (mm) TO-263AB / D2PAK



LOGIC LEVEL TRIAC

Ratings and Characteristics (Ta 25 °C unless otherwise noted)

Fig. 1: Maximum power dissipation versus RMS on-state current (full cycle).

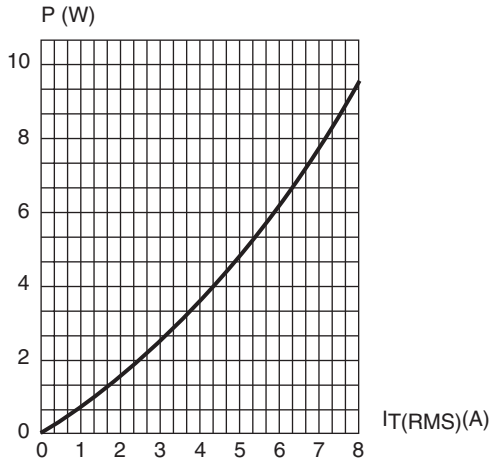


Fig. 3: Relative variation of thermal impedance versus pulse duration.

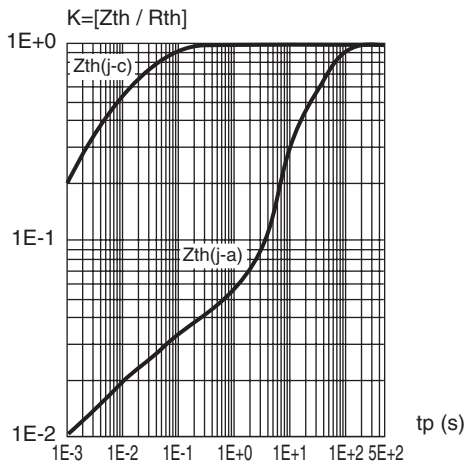


Fig. 5: Surge peak on-state current versus number of cycles

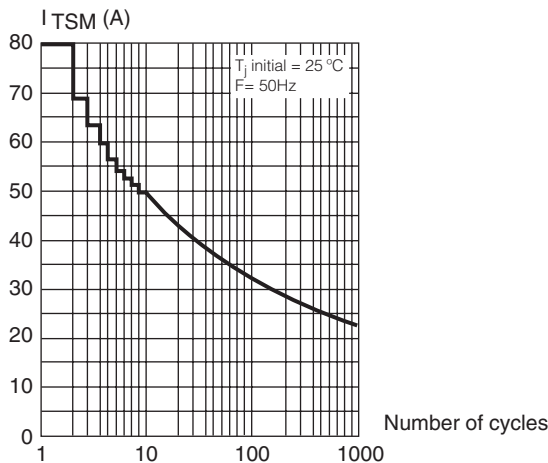


Fig. 2: RMS on-state current versus case temperature (full cycle).

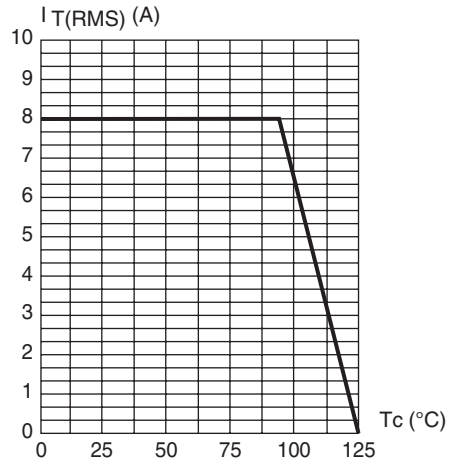


Fig. 4: On-state characteristics (maximum values)

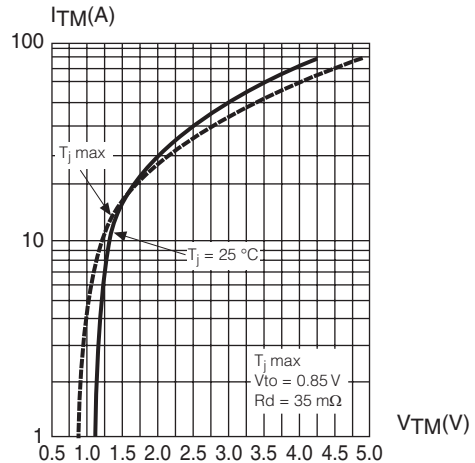
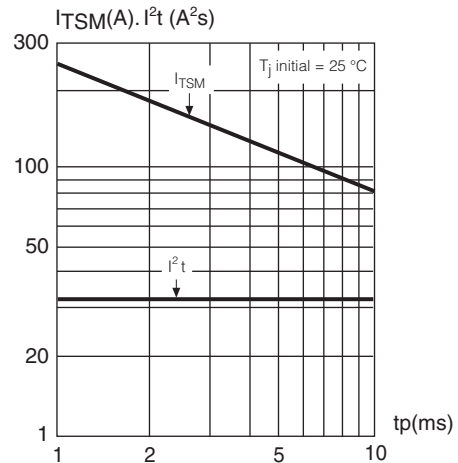


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms, and corresponding value of I²t.



LOGIC LEVEL TRIAC

Ratings and Characteristics (Ta 25 °C unless otherwise noted)

Fig. 7: Relative variation of gate trigger current, holding current and latching versus junction temperature (typical values)

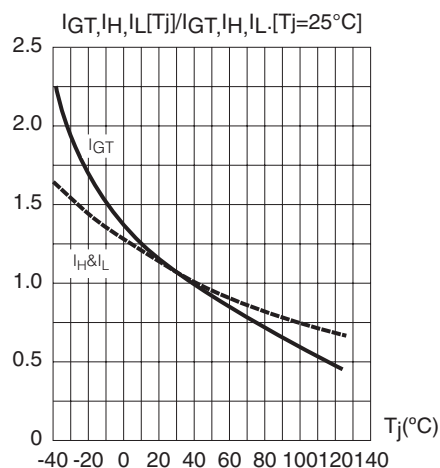


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

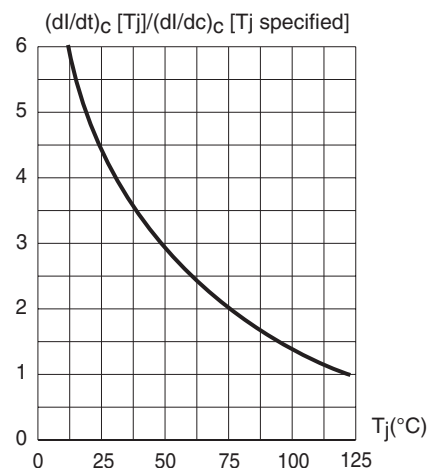
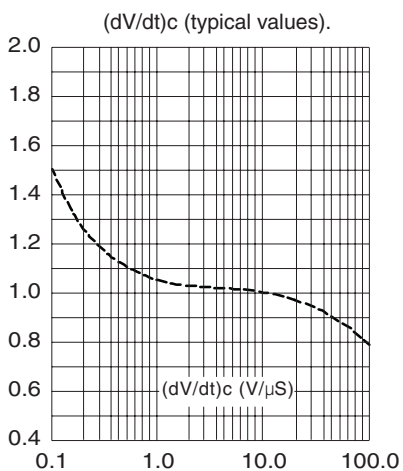


Fig. 9: Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values).



LOGIC LEVEL TRIAC

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