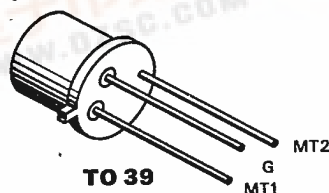


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Z0309BG - Z0309MG TRIACS

3.0 A 200-600 V
10/10/10/10 mA

The Z0309 series of TRIAC's are high performance PNP devices diffused with TAG's proprietary Top Glass™ Process. These parts are intended for general purpose applications where moderate gate sensitivity is required.

Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Part Nr.	Symbol	Min.	Max.	Unit	Test Conditions	
Repetitive Peak Off State Voltage	Z0309BG Z0309DG Z0309MG	V_{DRM}	200 400 600		V	[$T_j = -40^\circ\text{C}$ to 125°C] $R_{GK} = 1\text{K}\Omega$	
On-State Current		$I_T(\text{RMS})$	3.0		A		All Conduction Angles $T_C = 85^\circ\text{C}$
Nonrept. On-State Current		I_{TSM}	22		A		Half Cycle, 60 Hz
Nonrept. On-State Current		I_{TSM}	20		A	Half Cycle, 50 Hz	
Fusing Current		I^2t	2		A^2s	$t = 10\text{ ms}$	
Peak Gate Current		I_{GM}	1.2		A	10 μs max.	
Peak Gate Dissipation		P_{GM}	3		W	10 μs max.	
Gate Dissipation		$P_{G(\text{AV})}$	0.2		W	20 ms max.	
Operating Temperature		T_j	-55	125	$^\circ\text{C}$		
Storage Temperature		T_{stg}	-65	150	$^\circ\text{C}$		
Soldering Temperature		T_{sld}		250	$^\circ\text{C}$	1.6 mm from case, 10 s max.	

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Min.	Max.	Unit	Test Conditions
Off-State Leakage Current	I_{DRM}		200	μA	$V_D = V_{DRM}$ $R_{GK} = 1\text{K}\Omega$ $T_j = 125^\circ\text{C}$
Off-State Leakage Current	I_{DRM}		5	μA	$V_D = V_{DRM}$ $R_{GK} = 1\text{K}\Omega$ $T_j = 25^\circ\text{C}$
On-State Voltage	V_T		1.85	V	at $I_T = 4.5\text{ A}$, $T_j = 25^\circ\text{C}$
On-State Threshold Voltage	$V_{T(\text{TO})}$		0.95	V	$T_j = 125^\circ\text{C}$
On-State Slope Resistance	r_T		200	$\text{m}\Omega$	$T_j = 125^\circ\text{C}$
Gate Trigger Current	$I_{GT\text{ I}+}$ (1)		10	mA	$V_D = 12\text{ V}$
	$I_{GT\text{ I}-}$ (2)		10	mA	$V_D = 12\text{ V}$
	$I_{GT\text{ III}-}$ (3)		10	mA	$V_D = 12\text{ V}$
	$I_{GT\text{ III}+}$ (4)		10	mA	$V_D = 12\text{ V}$
Gate Trigger Voltage	V_{GT}		2	V	$V_D = 12\text{ V}$ All Quadrants
Holding Current	I_H		10	mA	$R_{GK} = 1\text{K}\Omega$
Critical Rate of Voltage Rise	dv/dt	50		$\text{V}/\mu\text{s}$	$V_D = .67 \times V_{DRM}$ $R_{GK} = 1\text{K}\Omega$ $T_j = 125^\circ\text{C}$
Critical Rate of Rise, Off-State	dv/dt_c	2		$\text{V}/\mu\text{s}$	$I_T = 3.0\text{ A}$ $di/dt = 1.33\text{ A/ms}$ $T_C = 85^\circ\text{C}$
Thermal Resistance junction to case	$R_{\theta jc}$		9	K/W	
Thermal Resistance junction to amb.	$R_{\theta ja}$		160	K/W	

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