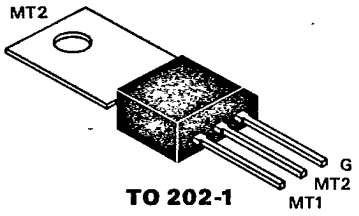
TAG SEMICONDUCTORS LTD

Z0409BE – Z0409NE TRIACS

4.0 A 200–800 V 10/10/10/10 mA



TO 202-1

The Z0409 series of TRIAC's are high performance PNPN 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 $T_A = 25\,°C$ unless otherwise noted

Parameter	Part Nr.	Symbol	Min.	Max.	Unit	Test Conditions
Repetitive Peak Off State Voltage	**Z0409BE**	V_{DRM}	200		V	
	Z0409DE		400		V	$T_j = -40\,°C$ to $125\,°C$, $R_{GK} = 1\,K\Omega$
	Z0409ME		600		V	
	Z0409NE		800		V	
On-State Current		$I_{T(RMS)}$	4.0		A	All Conduction Angles $T_C = 75\,°C$
Nonrept. On-State Current		I_{TSM}	25		A	Half Cycle, 60 Hz
Nonrept. On-State Current		I_{TSM}	22		A	Half Cycle, 50 Hz
Fusing Current		I^2t	2.4		A^2s	$t = 10$ ms
Peak Gate Current		I_{GM}	1.2		A	10µs max.
Peak Gate Dissipation		P_{GM}	3		W	10µs max.
Gate Dissipation		$P_{G(AV)}$	0.2		W	20 ms max.
Operating Temperature		T_j	−40	125	°C	
Storage Temperature		T_{stg}	−40	150	°C	
Soldering Temperature		T_{sld}		250	°C	1.6 mm from case, 10 s max.

Electrical Characteristics $T_A = 25\,°C$ unless otherwise noted

Parameter	Symbol	Min.	Max.	Unit	Test Conditions
Off-State Leakage Current	I_{DRM}		200	µA	$V_D = V_{DRM}$ $R_{GK} = 1\,K\Omega$ $T_j = 125\,°C$
Off-State Leakage Current	I_{DRM}		5	µA	$V_D = V_{DRM}$ $R_{GK} = 1\,K\Omega$ $T_j = 25\,°C$
On-State Voltage	V_T		2.10	V	at $I_T = 6.0$ A, $T_j = 25\,°C$
On-State Threshold Voltage	$V_{T(TO)}$		0.95	V	$T_j = 125\,°C$
On-State Slope Resistance	r_T		180	mΩ	$T_j = 125\,°C$
Gate Trigger Current	I_{GT} I+ (1)		10	mA	$V_D = 12$ V
	I_{GT} I− (2)		10	mA	$V_D = 12$ V
	I_{GT} III− (3)		10	mA	$V_D = 12$ V
	I_{GT} III+ (4)		10	mA	$V_D = 12$ V
Gate Trigger Voltage	V_{GT}		2	V	$V_D = 12$ V All Quadrants
Holding Current	I_H		10	mA	$R_{GK} = 1\,K\Omega$
Critical Rate of Voltage Rise	dv/dt	50		V/µs	$V_D = .67 \times V_{DRM}$ $R_{GK} = 1\,K\Omega$ $T_j = 125\,°C$
Critical Rate of Rise, Off-State	dv/dt_c	2		V/µs	$I_T = 4.0$ A di/dt = 1.78 A/ms $T_C = 75\,°C$
Thermal Resistance junc. to case	$R_{\Theta jc}$		7.5	K/W	
Thermal Resistance junc. to amb.	$R_{\Theta ja}$		60	K/W	