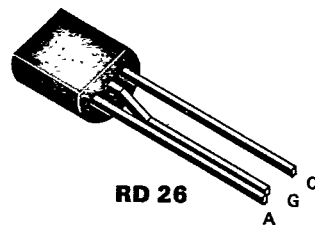


TAG SEMICONDUCTORS LTD

**E0102YB -
E0102AB FAST SCR'S****0.8 A 30-100 V <200 μ A**

The E0102 series silicon controlled rectifiers are high performance epitaxial PNP devices. These parts are intended for low voltage, high speed applications

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	E0102YB E0102FB E0102AB	V_{DRM} V_{RRM}	30 60 100		V	$T_J = -40^\circ\text{C}$ to 125°C $R_{GK} = 1\text{K}\Omega$
On-State Current		$I_T(\text{RMS})$	0.8		A	All Conduction Angles $T_C = 40^\circ\text{C}$
Average On-State Current		$I_T(\text{AV})$	0.5		A	$T_C = 40^\circ\text{C}$, Half Cycle, $\Theta = 180^\circ\text{C}$
Nonrept. On-State Current		I_{TSM}	8		A	Half Cycle, 60 Hz
Nonrept. On-State Current		I_{TSM}	7		A	Half Cycle, 50 Hz
Fusing Current		I^2t	0.24		A^2s	$t = 10\text{ ms}$, Half Cycle
Peak Reverse Gate Voltage		V_{GRM}	8		V	$I_{GR} = 10\text{ }\mu\text{A}$
Peak Gate Current		I_{GM}	1		A	$10\text{ }\mu\text{s}$ max.
Peak Gate Dissipation		P_{GM}	2		W	$10\text{ }\mu\text{s}$ max.
Gate Dissipation		$P_{G(\text{AV})}$	0.1		W	20 ms max.
Operating Temperature		T_J	-40	125	$^\circ\text{C}$	
Storage Temperature		T_{stg}	-40	125	$^\circ\text{C}$	
Soldering Temperature		T_{slid}		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}/I_{RRM}		50	μA	$T_J = 125^\circ\text{C}$, @ $V_{DRM} + V_{RRM}$, $R_{GK} = 1\text{K}\Omega$
Off-State Leakage Current	I_{DRM}/I_{RRM}		1	μA	$T_J = 25^\circ\text{C}$, @ $V_{DRM} + V_{RRM}$, $R_{GK} = 1\text{K}\Omega$
On-State Voltage	V_T		1.7	V	at $I_T = 1.0\text{ A}$, $T_J = 25^\circ\text{C}$
On-State Threshold Voltage	$V_{T(\text{TO})}$		0.95	V	$T_J = 125^\circ\text{C}$
On-State Slope Resistance	r_T		600	$\text{m}\Omega$	$T_J = 125^\circ\text{C}$
Gate Trigger Current	I_{GT}		200	μA	$V_D = 7\text{ V}$
Gate Trigger Voltage	V_{GT}		0.8	V	$V_D = 7\text{ V}$
Holding Current	I_H		5	mA	$R_{GK} = 1\text{K}\Omega$
Latching Current	I_L		6	mA	$R_{GK} = 1\text{K}\Omega$
Critical Rate of Voltage Rise	dv/dt	20		$\text{V}/\mu\text{s}$	$V_D = .67 \times V_{DRM}$, $R_{GK} = 1\text{K}\Omega$, $T_J = 125^\circ\text{C}$
Critical Rate of Current Rise	di/dt	100		$\text{A}/\mu\text{s}$	$I_G = 10\text{ mA}$, $di/dt = 1\text{ A}/\mu\text{s}$, $T_J = 125^\circ\text{C}$
Gate Controlled Delay Time	t_{gd}		50	ns	$I_G = 10\text{ mA}$, $di/dt = 1\text{ A}/\mu\text{s}$
Commutated Turn-Off Time	t_q		10	μs	$T_C = 85^\circ\text{C}$, $V_D = .67 \times V_{DRM}$, $V_R = 35\text{ V}$, $I_T = I_T(\text{AV})$
Thermal Resistance junc. to case	$R_{\theta jc}$		90	K/W	
Thermal Resistance junc. to amb.	$R_{\theta ja}$		180	K/W	

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