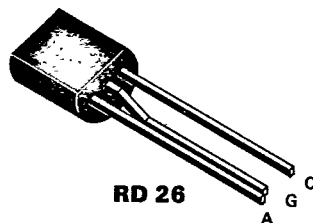


TAG SEMICONDUCTORS LTD

**E0102YB -  
E0102AB FAST SCR'S****0.8 A 30-100 V < 200  $\mu$ A**

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



RD 26

**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	<b>E0102YB</b> <b>E0102FB</b> <b>E0102AB</b>	$V_{DRM}$ $V_{RRM}$	30 60 100		V	$T_j = -40^\circ\text{C}$ to $125^\circ\text{C}$ $R_{GK} = 1\text{K}\Omega$
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		$\text{A}^2\text{s}$	$t = 10\text{ ms}$ , Half Cycle
Peak Reverse Gate Voltage		$V_{GRM}$	8		V	$I_{GR} = 10\ \mu\text{A}$
Peak Gate Current		$I_{GM}$	1		A	$10\ \mu\text{s}$ max.
Peak Gate Dissipation		$P_{GM}$	2		W	$10\ \mu\text{s}$ 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	$\mu\text{A}$	$T_j = 125^\circ\text{C}$ , @ $V_{DRM} + V_{RRM}$ , $R_{GK} = 1\text{K}\Omega$
Off-State Leakage Current	$I_{DRM}/I_{RRM}$		1	$\mu\text{A}$	$T_j = 25^\circ\text{C}$ , @ $V_{DRM} + V_{RRM}$ , $R_{GK} = 1\text{K}\Omega$
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	$\mu\text{A}$	$V_D = 7\text{ V}$
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		$\text{A}/\mu\text{s}$	$I_G = 10\text{ mA}$ , $di_G/dt = 1\text{ A}/\mu\text{s}$ , $T_j = 125^\circ\text{C}$
Gate Controlled Delay Time	$t_{gd}$		50	ns	$I_G = 10\text{ mA}$ , $di_G/dt = 1\text{ A}/\mu\text{s}$
Commutated Turn-Off Time	$t_q$		10	$\mu\text{s}$	$T_C = 85^\circ\text{C}$ , $V_D = .67 \times V_{DRM}$ , $V_R = 35\text{ V}$ , $I_T = I_T(\text{AV})$
Thermal Resistance junction to case	$R_{\theta jc}$		90	K/W	
Thermal Resistance junction to amb.	$R_{\theta ja}$		180	K/W	

E01