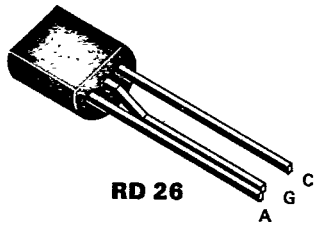
TAG SEMICONDUCTORS LTD

E0102YB – E0102AB FAST SCR'S

0.8 A 30–100 V <200 µA

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



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Absolute Maximum Ratings

$T_A = 25\,°C$ unless otherwise noted

Parameter	Part Nr.	Symbol	Min.	Max.	Unit	Test Conditions
Repetitive Peak Off State Voltage	E0102YB	V_{DRM}	30		V	Tj = −40 °C to 125 °C
	E0102FB	V_{RRM}	60		V	$R_{GK} = 1\,K\Omega$
	E0102AB		100		V	
On-State Current		$I_{T(RMS)}$	0.8		A	All Conduction Angles $T_C = 40\,°C$
Average On-State Current		$I_{T(AV)}$	0.5		A	$T_C = 40\,°C$, Half Cycle, $\Theta = 180\,°C$
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 ms, Half Cycle
Peak Reverse Gate Voltage		V_{GRM}	8		V	$I_{GR} = 10\,\mu A$
Peak Gate Current		I_{GM}	1		A	10µs max.
Peak Gate Dissipation		P_{GM}	2		W	10µs max.
Gate Dissipation		$P_{G(AV)}$	0.1		W	20 ms max.
Operating Temperature		Tj	−40	125	°C	
Storage Temperature		T_{stg}	−40	125	°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}/I_{RRM}		50	µA	Tj = 125 °C, @ $V_{DRM} + V_{RRM}$, $R_{GK} = 1\,K\Omega$
Off-State Leakage Current	I_{DRM}/I_{RRM}		1	µA	Tj = 25 °C, @ $V_{DRM} + V_{RRM}$, $R_{GK} = 1\,K\Omega$
On-State Voltage	V_T		1.7	V	at $I_T = 1.0\,A$, Tj = 25 °C
On-State Threshold Voltage	$V_{T(TO)}$		0.95	V	Tj = 125 °C
On-State Slope Resistance	r_T		600	mΩ	Tj = 125 °C
Gate Trigger Current	I_{GT}		200	µA	$V_D = 7\,V$
Gate Trigger Voltage	V_{GT}		0.8	V	$V_D = 7\,V$
Holding Current	I_H		5	mA	$R_{GK} = 1\,K\Omega$
Latching Current	I_L		6	mA	$R_{GK} = 1\,K\Omega$
Critical Rate of Voltage Rise	dv/dt	20		V/µs	$V_D = .67 \times V_{DRM}$ $R_{GK} = 1\,K\Omega$ Tj = 125 °C
Critical Rate of Current Rise	di/dt	100		A/µs	$I_G = 10\,mA$ $di_G/dt = 1\,A/\mu s$ Tj = 125 °C
Gate Controlled Delay Time	t_{gd}		50	ns	$I_G = 10\,mA$ $di_G/dt = 1\,A/\mu s$
Commutated Turn-Off Time	t_q		10	µs	$T_C = 85\,°C$ $V_D = .67 \times V_{DRM}$ $V_R = 35\,V$ $I_T = I_{T(AV)}$
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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