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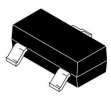
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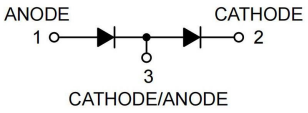
Dual Series Switching Diode

Features

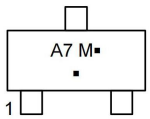
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant



SOT−23



MARKING DIAGRAM



A7 = Device Code
M = Date Code*
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

MAXIMUM RATINGS (Each Diode)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	100	Vdc
Forward Current	I_F	215	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc
Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Average Rectified Forward Current (Note 1) (averaged over any 20 ms period)	$I_{F(AV)}$	715	mA
Repetitive Peak Forward Current	I_{FRM}	450	mA
Non−Repetitive Peak Forward Current t = 1.0 μs t = 1.0 ms t = 1.0 s	I_{FSM}	 2.0 1.0 0.5	A

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR−5 Board (Note 1) T_A = 25°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate (Note 2) T_A = 25°C Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−65 to +150	°C

1. FR−5 = 1.0 × 0.75 × 0.062 in.
2. Alumina = 0.4 × 0.3 × 0.024 in 99.5% alumina.

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OFF CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Each Diode)

Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage, ($I_{(BR)}$ = 100 μA)	$V_{(BR)}$	100	–	Vdc
Reverse Voltage Leakage Current, (V_R = 100 Vdc)	I_R	–	1.0	μAdc
(V_R = 25 Vdc, T_J = 150°C)		–	30	
(V_R = 70 Vdc, T_J = 150°C)		–	50	
Diode Capacitance, (V_R = 0, f = 1.0 MHz)	C_D	–	1.5	pF
Forward Voltage, (I_F = 1.0 mAdc)	V_F	–	715	mVdc
(I_F = 10 mAdc)		–	855	
(I_F = 50 mAdc)		–	1000	
(I_F = 150 mAdc)		–	1250	
Reverse Recovery Time, (I_F = I_R = 10 mAdc, $i_{R(REC)}$ = 1.0 mAdc) R_L = 100 Ω	t_{rr}	–	6.0	ns
Forward Recovery Voltage, (I_F = 10 mA, t_r = 20 ns)	V_{FR}	–	1.75	V

CURVES APPLICABLE TO EACH DIODE

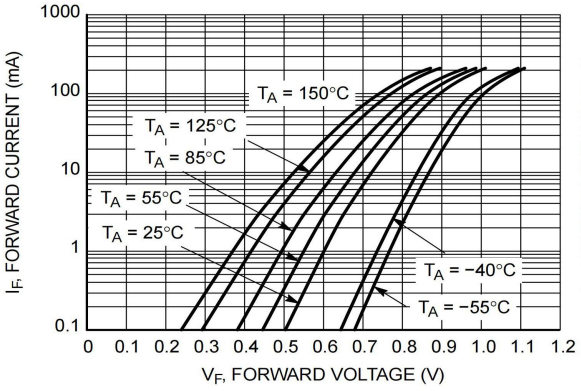


Figure 1. Forward Voltage

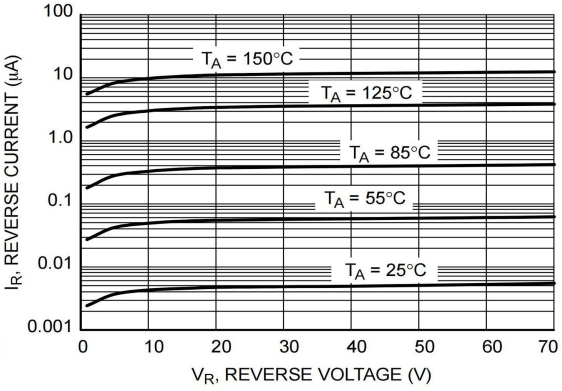


Figure 2. Leakage Current

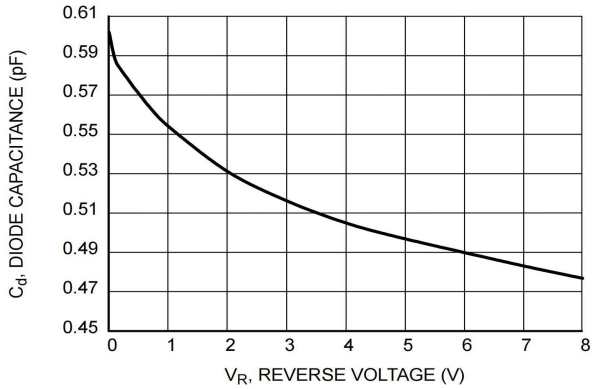


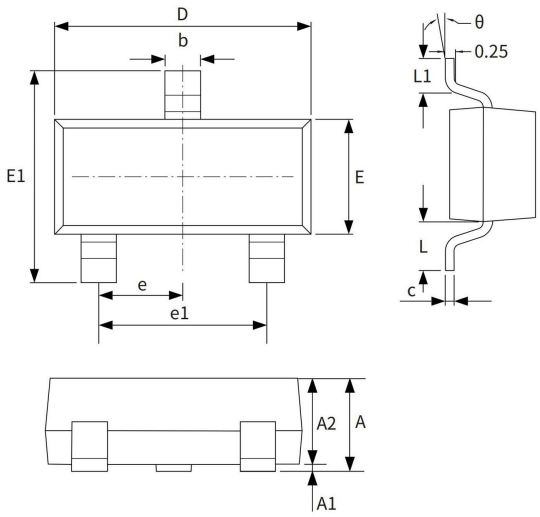
Figure 3. Capacitance

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Ordering Information

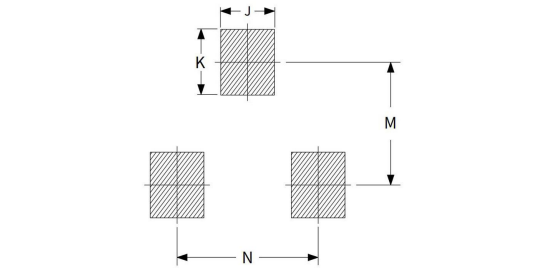
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	30000	240000	7''

Package Outline Dimensions (SOT-23)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.75	0.85	0.030	0.033
K	0.85	0.95	0.033	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077