DA121TT1

Preferred Device

Silicon Switching Diode

Features

- Pb−Free Package is Available

ON Semiconductor®

http://onsemi.com

MAXIMUM RATINGS (T_A = 25°C)

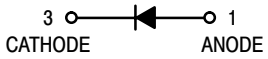
Rating	Symbol	Max	Unit
Continuous Reverse Voltage	V_R	80	V
Recurrent Peak Forward Current	I_F	200	mA
Peak Forward Surge Current Pulse Width = 10 μs	$I_{FM(surge)}$	500	mA

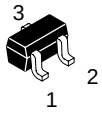
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation, FR−4 Board (Note 1) T_A = 25°C Derated above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JA}$	555	°C/W
Total Device Dissipation, FR−4 Board (Note 2) T_A = 25°C Derated above 25°C	P_D	360 2.9	mW mW/°C
Thermal Resistance, Junction−to−Ambient (Note 2)	$R_{\theta JA}$	345	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

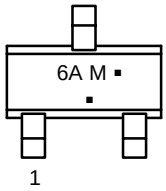
1. FR−4 @ Minimum Pad
2. FR−4 @ 1.0 × 1.0 Inch Pad





SOT−416 / SC−75
CASE 463
STYLE 2

MARKING DIAGRAM



6A = Specific Device Code
M = Date Code*
▪ = Pb−Free Package

(Note: Microdot may be in either location)

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

ORDERING INFORMATION

Device	Package	Shipping†
DA121TT1	SOT−416	3000 / Tape & Reel
DA121TT1G	SOT−416 (Pb−Free)	3000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Forward Voltage −	V_F			mV
(I_F = 1.0 mA)		−	715	
(I_F = 10 mA)		−	866	
(I_F = 50 mA)		−	1000	
(I_F = 150 mA)		−	1250	
Reverse Current −	I_R			μA
(V_R = 75 V)		−	1.0	
(V_R = 75 V, T_J = 150°C)		−	50	
(V_R = 25 V, T_J = 150°C)		−	30	
Capacitance − (V_R = 0, f = 1.0 MHz)	C_D	−	2.0	pF
Reverse Recovery Time − (I_F = I_R = 10 mA, R_L = 50 Ω) (Figure 1)	t_{rr}	−	6.0	ns
Stored Charge − (I_F = 10 mA to V_R = 6.0 V, R_L = 500 Ω) (Figure 2)	QS	−	45	PC
Forward Recovery Voltage − (I_F = 10 mA, t_r = 20 ns) (Figure 3)	V_{FR}	−	1.75	V

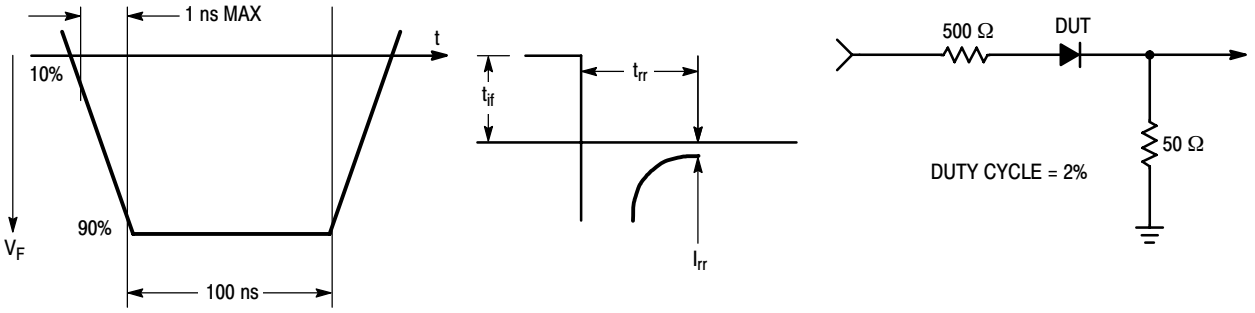


Figure 1. Reverse Recovery Time Equivalent Test Circuit

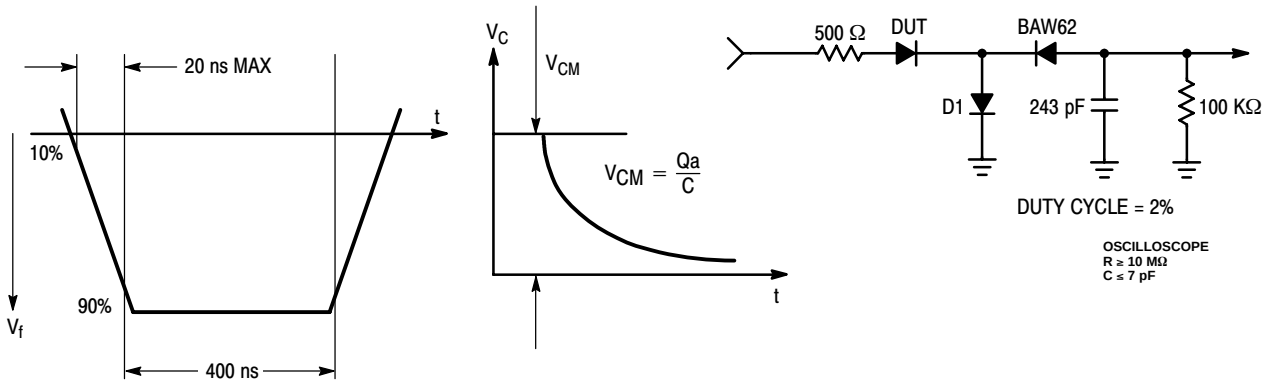


Figure 2. Recovery Charge Equivalent Test Circuit

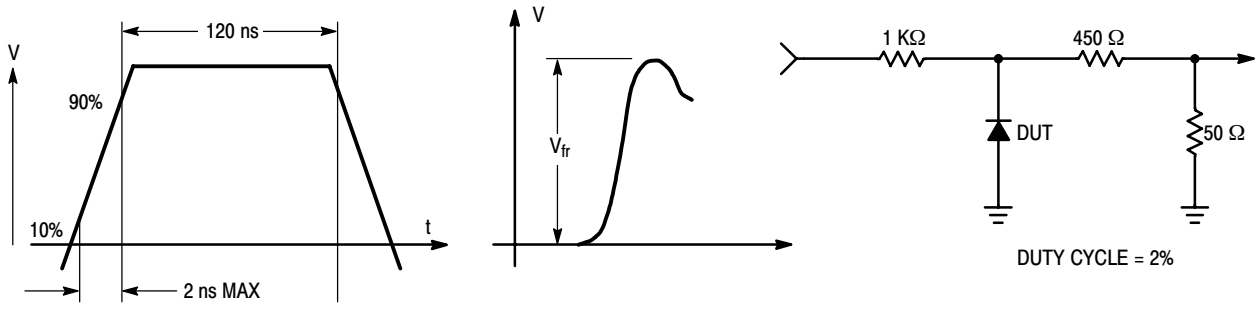


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

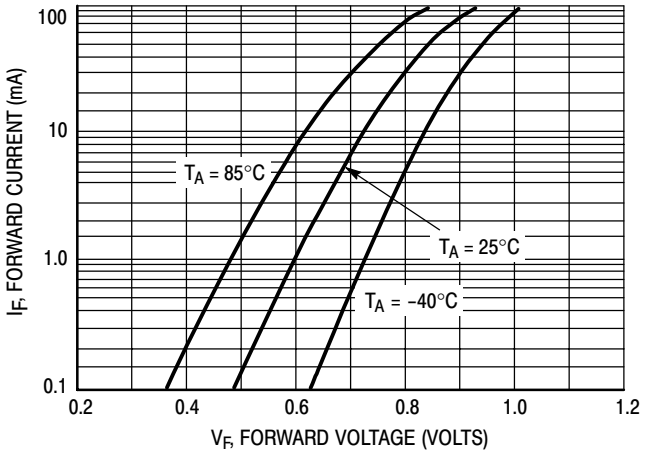


Figure 4. Forward Voltage

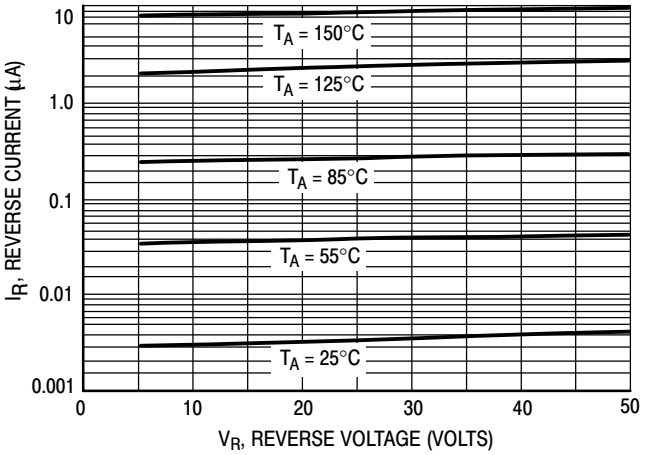


Figure 5. Leakage Current

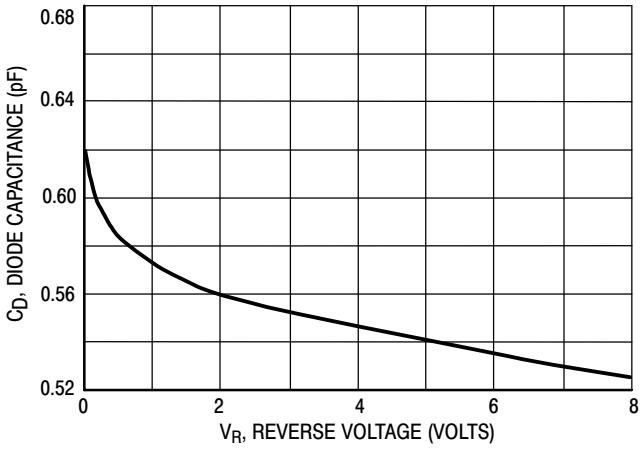


Figure 6. Capacitance

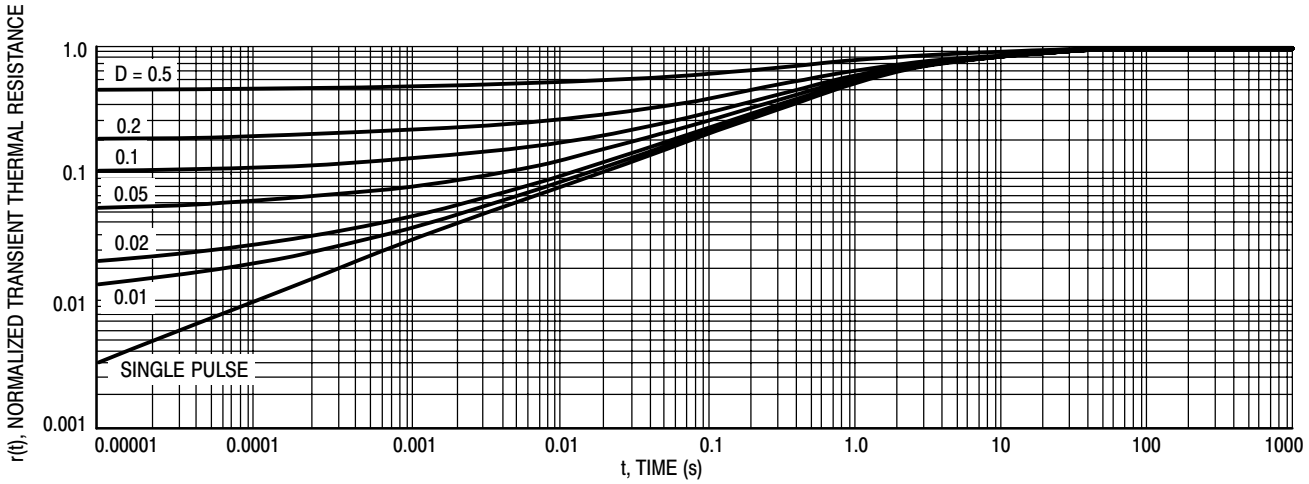
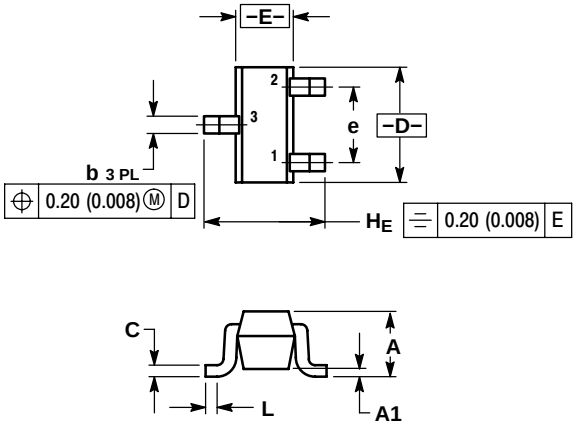


Figure 7. Normalized Thermal Response

DA121TT1

PACKAGE DIMENSIONS

SC−75 (SOT−416)
CASE 463−01
ISSUE F

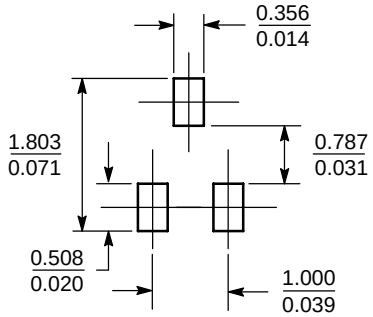


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.70	0.80	0.90	0.027	0.031	0.035
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.15	0.20	0.30	0.006	0.008	0.012
C	0.10	0.15	0.25	0.004	0.006	0.010
D	1.55	1.60	1.65	0.059	0.063	0.067
E	0.70	0.80	0.90	0.027	0.031	0.035
e	1.00 BSC			0.04 BSC		
L	0.10	0.15	0.20	0.004	0.006	0.008
H_E	1.50	1.60	1.70	0.061	0.063	0.065

STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

SOLDERING FOOTPRINT*



SCALE 10:1 (mm / inches)

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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