

Common Cathode Silicon Dual Switching Diode

This Common Cathode Silicon Epitaxial Planar Dual Diode is designed for use in ultra high speed switching applications. This device is housed in the SC-70 package which is designed for low power surface mount applications.

- Fast t_{rr} , < 3.0 ns
- Low C_D , < 2.0 pF
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Rating		Symbol	Value	Unit
Reverse Voltage	M1MA141WK	V_R	40	V_{dc}
	M1MA142WK		80	
Peak Reverse Voltage	M1MA141WK	V_{RM}	40	V_{dc}
	M1MA142WK		80	
Forward Current	Single	I_F	100	mAdc
	Dual		150	
Peak Forward Current	Single	I_{FM}	225	mAdc
	Dual		340	
Peak Forward Surge Current	Single	$I_{FSM}^{(1)}$	500	mAdc
	Dual		750	

THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

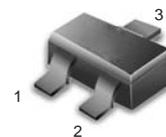
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Characteristic		Symbol	Condition	Min	Max	Unit
Reverse Voltage Leakage Current	M1MA141WK	I_R	$V_R = 35\text{ V}$	—	0.1	μAdc
	M1MA142WK		$V_R = 75\text{ V}$	—	0.1	
Forward Voltage		V_F	$I_F = 100\text{ mA}$	—	1.2	V_{dc}
Reverse Breakdown Voltage	M1MA141WK	V_R	$I_R = 100\ \mu\text{A}$	40	—	V_{dc}
	M1MA142WK			80—		
Diode Capacitance		C_D	$V_R=0, f=1.0\text{ MHz}$	—	2.0	pF
Reverse Recovery	Time	$t_{rr}^{(2)}$	$I_F=10\text{mA}, V_R=6.0\text{V}$ $R_L=100\ \Omega, I_{rr}=0.1\ I_R$	—	3.0	ns

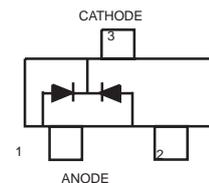
1. $t = 1\text{ SEC}$

2. t_{rr} Test Circuit

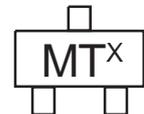
**SC-70/SOT-323 PACKAGE
COMMON CATHODE
DUAL SWITCHING DIODE
40/80 V-100 mA
SURFACE MOUNT**



SC - 70

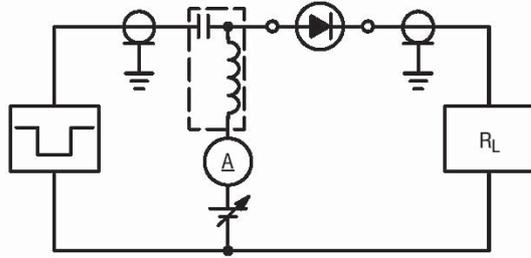


Marking Symbol
Type No. 141WK142WK
Symbol MT MU

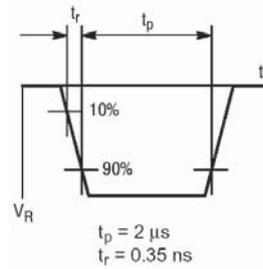


The "X" represents a smaller alpha digit Date Code. The Date Code indicates the actual month in which the part was manufactured.

RECOVERY TIME EQUIVALENT TEST CIRCUIT



INPUT PULSE



OUTPUT PULSE

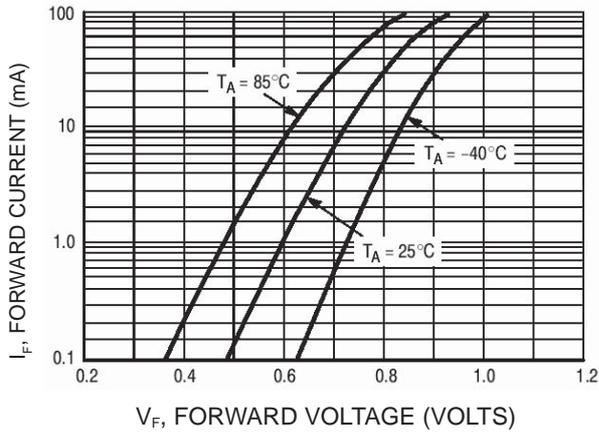
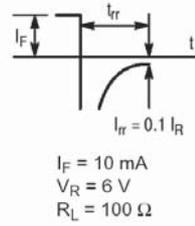


Figure 1. Forward Voltage

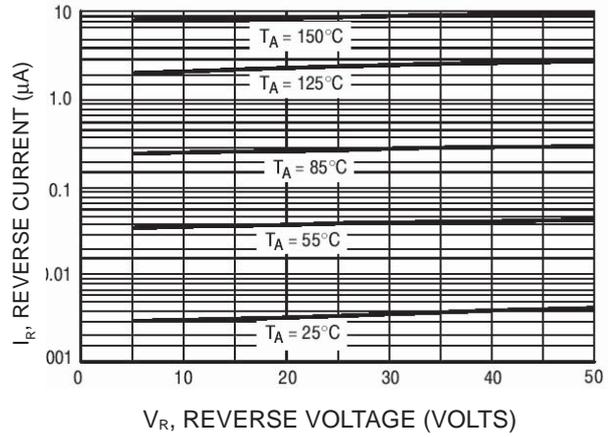


Figure 2. Reverse Current

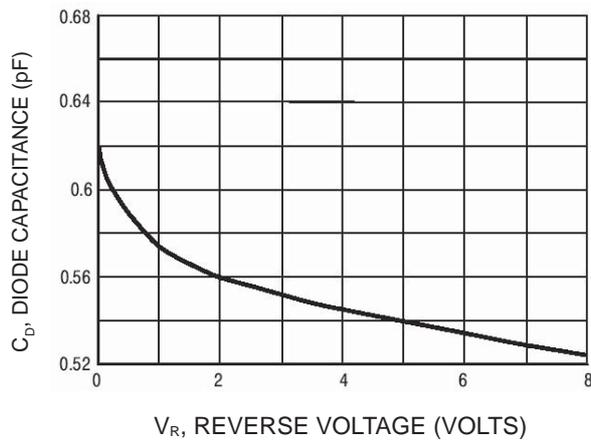
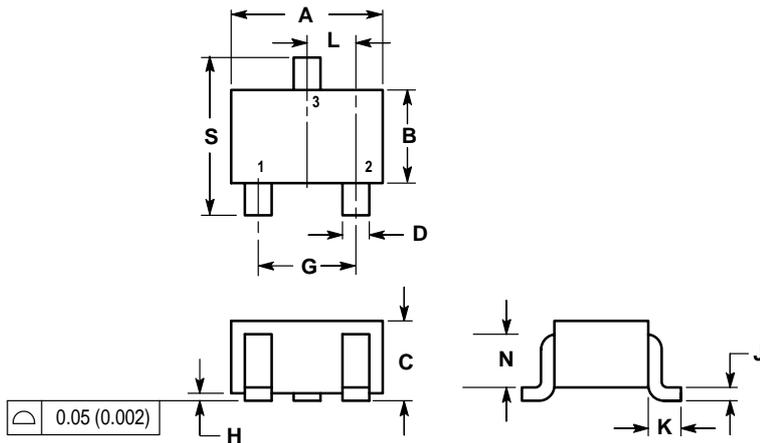


Figure 3. Diode Capacitance

SC-70

NOTES:

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



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.032	0.040	0.80	1.00
D	0.012	0.016	0.30	0.40
G	0.047	0.055	1.20	1.40
H	0.000	0.004	0.00	0.10
J	0.004	0.010	0.10	0.25
K	0.017 REF		0.425 REF	
L	0.026 BSC		0.650 BSC	
N	0.028 REF		0.700 REF	
S	0.079	0.095	2.00	2.40

