Single Silicon Switching Diode

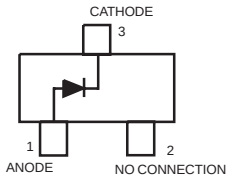
LM1MA141KT1G
S-LM1MA141KT1G
LM1MA142KT1G
S-LM1MA142KT1G

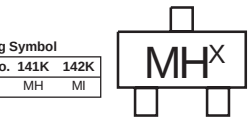
This Silicon Epitaxial Planar Diode is designed for use in ultra high speed switching applications. This device is housed in the SC–70 package which is designed for low power surface mount applications.

- Fast t_{rr}, < 3.0 ns
- Low C_T , < 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.

SC–70/SOT–323 PACKAGE
SINGLE SILICON
SWITCHING DIODE
40/80 V–100 mA
SURFACE MOUNT

SC – 70





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

DEVICE MARKING AND ORDERING INFORMATION

Device	Package	Shipping
LM1MA141KT1G	SOT-323/SC-70	3000/Tape&Reel
LM1MA141KT3G	SOT-323/SC-70	10000/Tape&Reel
LM1MA142KT1G	SOT-323/SC-70	3000/Tape&Reel
LM1MA142KT3G	SOT-323/SC-70	10000/Tape&Reel

DEVICE MARKING

LM1MA141KT1G = MH LM1MA142KT1G=MI

MAXIMUM RATINGS (T_A = 25°C)

Rating		Symbol	Value	Unit
Reverse Voltage	LM1MA141KT1G	V_R	40	V_{dc}
	LM1MA142KT1G		80	
Peak Reverse Voltage	LM1MA141KT1G	V_{RM}	40	V_{dc}
	LM1MA142KT1G		80	
Forward Current		I_F	100	mAdc
Peak Forward Current		I_{FM}	225	mAdc
Peak Forward Surge Current		I_{FSM}(1)	500	mAdc

THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	–55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Characteristic		Symbol	Condition	Min	Max	Unit
Reverse Voltage Leakage Current	LM1MA141KT1G	I_R	V_R = 35 V	—	0.1	µAdc
	LM1MA142KT1G		V_R = 75 V	—	0.1	
Forward Voltage		V_F	I_F = 100 mA	—	1.2	Vdc
Reverse Breakdown Voltage	LM1MA141KT1G	V_R	I_R = 100 µA	40	—	Vdc
	LM1MA142KT1G			80	—	
Diode Capacitance		C_D	V_R=0, f=1.0 MHz	—	2.0	pF
Reverse Recovery	Time	trr(2)	I_F=10mA,V_R=6.0V	—	3.0	ns
			R_L=100Ω,I_{rr}=0.1 I_R			

1. t = 1 SEC
2. t_{rr} Test Circuit

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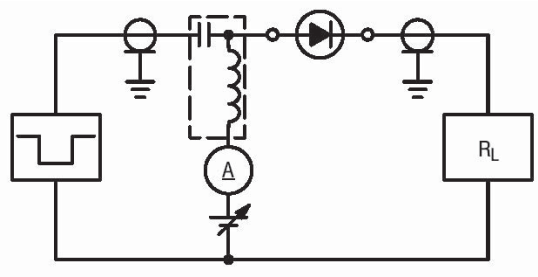
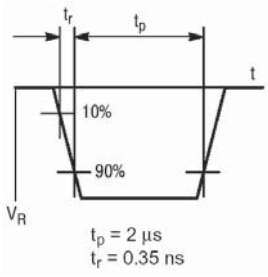
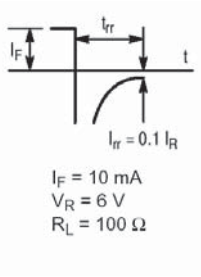
RECOVERY TIME EQUIVALENT TEST CIRCUIT



INPUT PULSE



OUTPUT PULSE



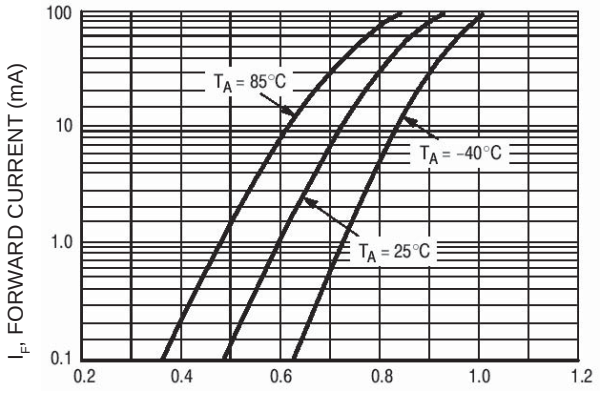


Figure 1. Forward Voltage

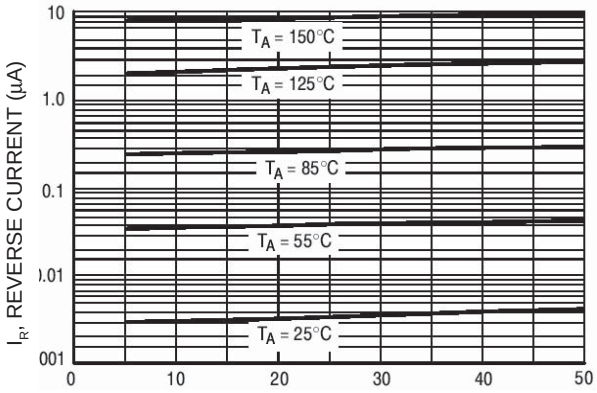


Figure 2. Reverse Current

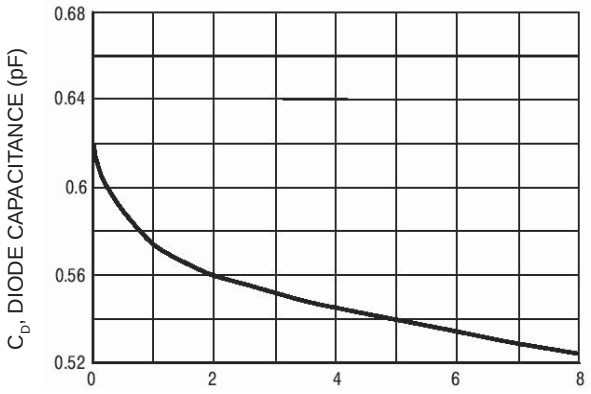
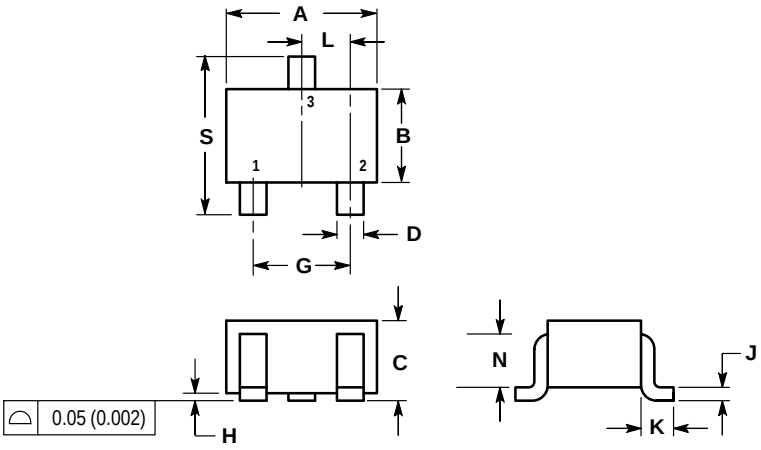


Figure 3. Diode Capacitance

LM1MA141KT1G,S-LM1MA141KT1G,LM1MA142KT1G,S-LM1MA142KT1G

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