NSR0115CQP6T5G

Two Dual 15 V, 0.1 A Common Cathode Schottky Diodes

These Schottky barrier diodes are designed for high speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Industry leading smallest surface mount package is excellent for hand−held and portable applications where space is limited.

Features

- Extremely Fast Switching Speed
- Low Forward Voltage − 0.4 V (Max) @ I_F = 10 mA
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

Typical Applications

- Portable Devices (Digital Cameras, MP3 Players … etc)
- Mobile Phones
- Keyboards
- Low Voltage Motor Control (Disc Drives)

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	15	V
Forward Current (DC)	I_F	100	mA
Repetitive Peak Forward Current	I_{FRM}	0.3	A
Non−Repetitive Peak Forward Current (t < 1.0 s)	I_{FSM}	2.0	A

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Total Device Dissipation T_A = 25°C Derate above 25°C	P_D (Note 1)	260 2.1	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$ (Note 1)	480	°C/W
Total Device Dissipation T_A = 25°C Derate above 25°C	P_D (Note 2)	360 2.9	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$ (Note 2)	347	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C

1. FR−4 @ 10 mm^2, 1 oz. copper trace, still air.
2. FR−4 @ 100 mm^2, 1 oz. copper trace, still air.

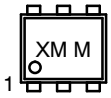
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MARKING DIAGRAM

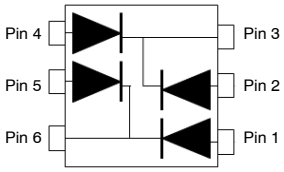


SOT−963
CASE 527AD



XM = Specific Device Code
M = Month Code

PIN CONFIGURATION



ORDERING INFORMATION

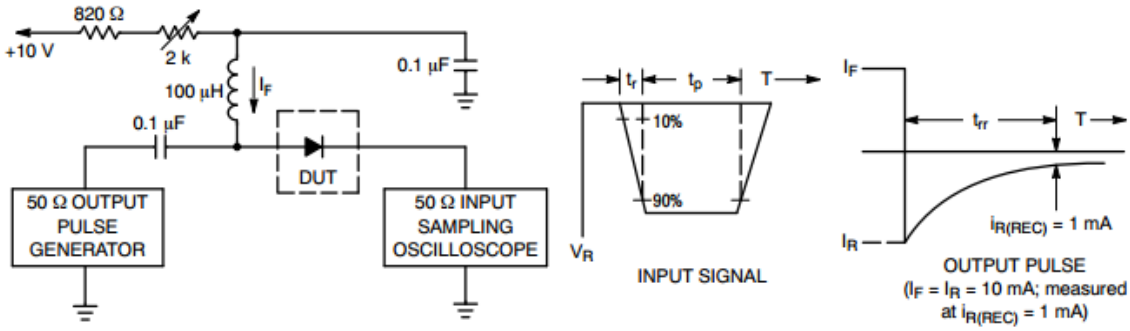
Device	Package	Shipping
NSR0115CQP6T5G	SOT−963 (Pb−Free)	8000 / Tape & Reel

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

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ELECTRICAL CHARACTERISTICS (T_A = 25°C, Single Diode)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Breakdown Voltage (I_R = 20 μA)	$V_{(BR)R}$	15	–	Vdc
Total Capacitance (V_R = 1.0 V, f = 1.0 MHz)	C_T	–	8.0	pF
Reverse Leakage (V_R = 10 V)	I_R	–	15	uA
Forward Voltage (I_F = 10 μA)	V_F		0.18	V
Forward Voltage (I_F = 10 mA)	V_F	–	0.4	V
Reverse Recovery Time (I_F = I_R = 10 mA, $I_{R(REC)}$ = 1.0 mA, Figure 1)	t_{rr}	–	5.0	ns



Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

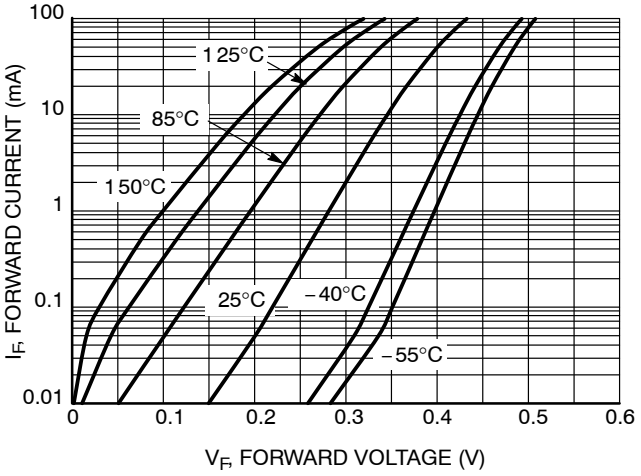


Figure 2. Forward Voltage

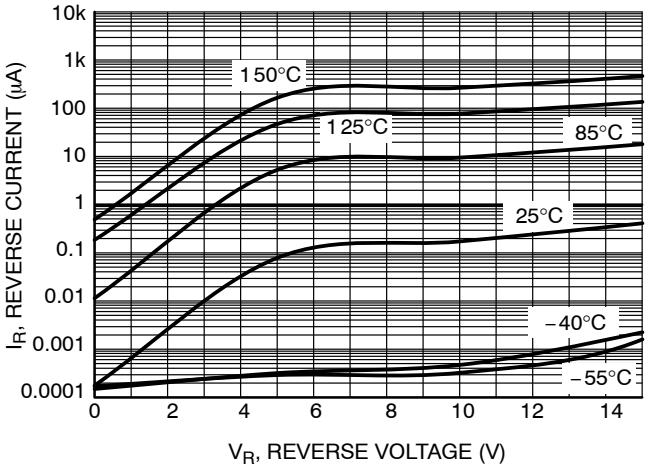


Figure 3. Leakage Current

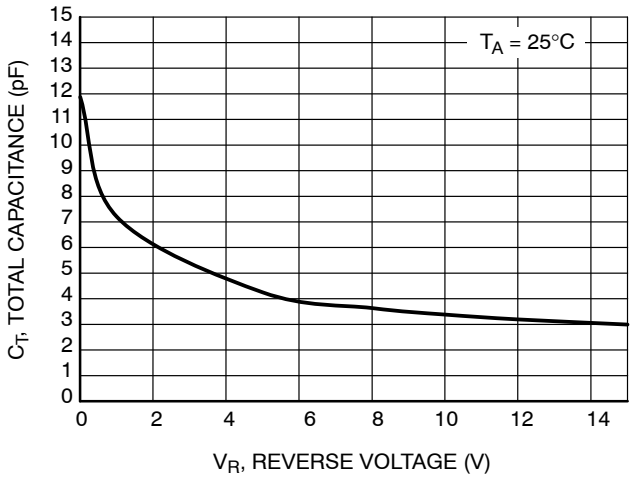
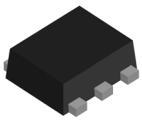


Figure 4. Total Capacitance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

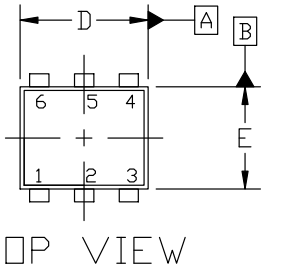


SOT−963 1.00x1.00x0.37, 0.35P
CASE 527AD
ISSUE F

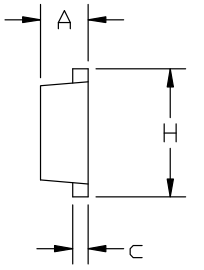
DATE 20 FEB 2024

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

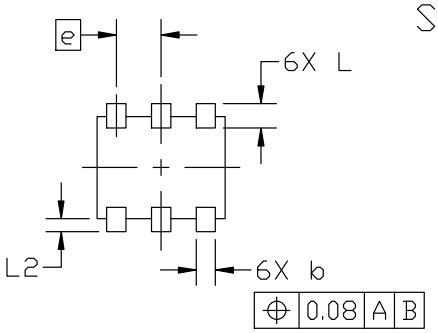
	MILLIMETERS		
DIM	MIN.	NOM.	MAX.
A	0.34	0.37	0.40
b	0.10	0.15	0.20
c	0.07	0.12	0.17
D	0.95	1.00	1.05
E	0.75	0.80	0.85
e	0.35 BSC		
H	0.95	1.00	1.05
L	0.19 REF		
L2	0.05	0.10	0.15



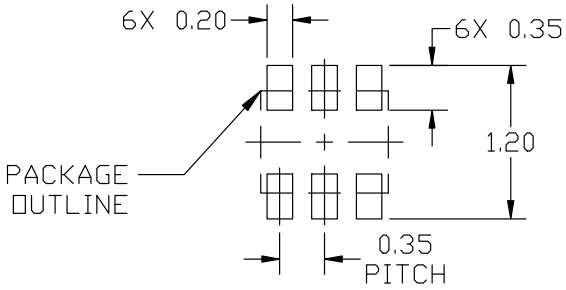
TOP VIEW



SIDE VIEW



BOTTOM VIEW



RECOMMENDED MOUNTING FOOTPRINT

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

STYLE 1:
PIN 1. EMITTER 1
2. BASE 1
3. COLLECTOR 2
4. EMITTER 2
5. BASE 2
6. COLLECTOR 1

STYLE 2:
PIN 1. EMITTER 1
2. EMITTER2
3. BASE 2
4. COLLECTOR 2
5. BASE 1
6. COLLECTOR 1

STYLE 3:
PIN 1. CATHODE 1
2. CATHODE 1
3. ANODE/ANODE 2
4. CATHODE 2
5. CATHODE 2
6. ANODE/ANODE 1

STYLE 4:
PIN 1. COLLECTOR
2. COLLECTOR
3. BASE
4. EMITTER
5. COLLECTOR
6. COLLECTOR

STYLE 5:
PIN 1. CATHODE
2. CATHODE
3. ANODE
4. ANODE
5. CATHODE
6. CATHODE

STYLE 6:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. CATHODE
6. CATHODE

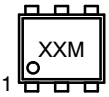
STYLE 7:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. ANODE
6. CATHODE

STYLE 8:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN

STYLE 9:
PIN 1. SOURCE 1
2. GATE 1
3. DRAIN 2
4. SOURCE 2
5. GATE 2
6. DRAIN 1

STYLE 10:
PIN 1. CATHODE 1
2. N/C
3. CATHODE 2
4. ANODE 2
5. N/C
6. ANODE 1

GENERIC MARKING DIAGRAM*



XX = Specific Device Code
M = Month Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

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DESCRIPTION:	SOT−963 1.00x1.00x0.37, 0.35P	PAGE 1 OF 1

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