



## Schottky Barrier Diode Ceramic Surface Mount

**Qualified per MIL-PRF-19500/444**

Qualified Levels:  
JAN, JANTX, JANTXV  
and JANS

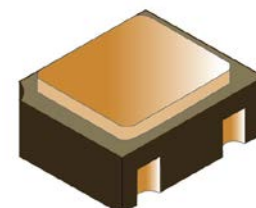
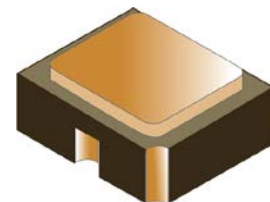
### DESCRIPTION

This 1N5711UB and 1N5712UB Schottky barrier diode is ceramic encased and offers military grade qualifications for high-reliability applications. Unidirectional as well as doubler, common anode and common cathode polarities are available.

**Important:** For the latest information, visit our website <http://www.microsemi.com>.

### FEATURES

- Surface mount equivalent of JEDEC registered 1N5711, 1N5712 numbers.
- JAN, JANTX, JANTXV and commercial qualifications also available per MIL-PRF-19500/444 on "1N" numbers only.  
(See [Part Nomenclature](#) for all available options).
- RoHS compliant by design.





**UB Package**

### APPLICATIONS / BENEFITS

- Low reverse leakage characteristics.
- Low-profile ceramic surface mount package (see package illustration).
- ESD sensitive to Class 1.

Also available in:

 **DO-35 package**  
(axial-leaded)  
[1N5711-1, 1N5712-1,](#)  
[1N6857-1, and 1N6858-1](#)

 **DO-213AA package**  
(surface mount)  
[1N5711UR-1, 1N5712UR-1,](#)  
[1N6857UR-1, and](#)  
[1N6858UR-1](#)

### MAXIMUM RATINGS @ 25 °C unless otherwise stated

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	$T_J$ and $T_{STG}$	-65 to +150	°C
Thermal Resistance, Junction-to-Solder Pad	$R_{\theta JSP}$	100	°C/W
Average Rectified Output Current:			
1N5711UB <sup>(1)</sup>	$I_O$	33	mA
1N5712UB <sup>(2)</sup>		75	
Solder Temperature @ 10 s		260	°C

**NOTES:** 1. At  $T_{EC}$  and  $T_{SP} = +140$  °C, derate  $I_O$  to 0 at +150 °C.  
2. At  $T_{EC}$  and  $T_{SP} = +130$  °C, derate  $I_O$  to 0 at +150 °C.

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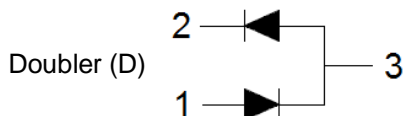
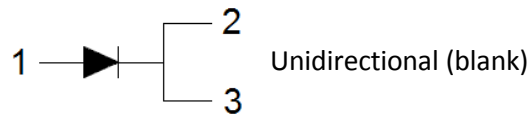
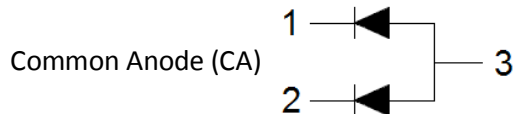
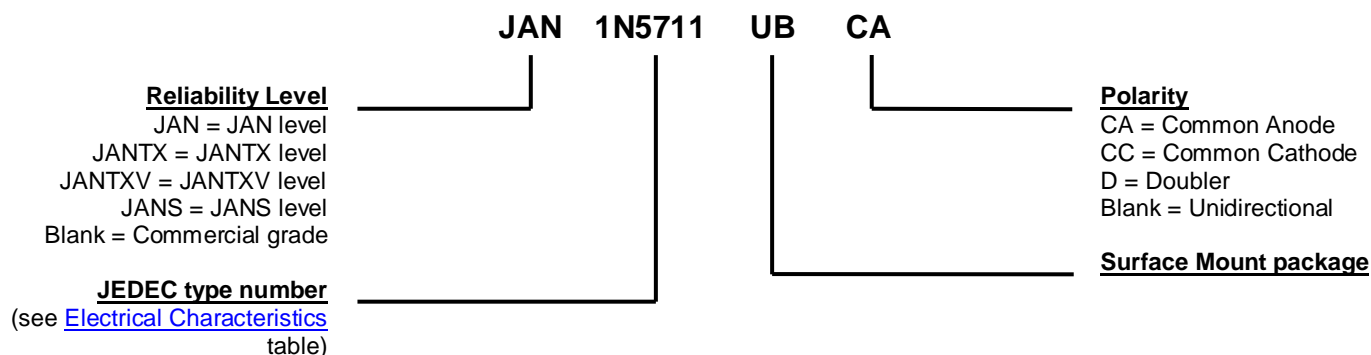
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**Website:**

[www.microsemi.com](http://www.microsemi.com)

**MECHANICAL and PACKAGING**

- CASE: Ceramic.
- TERMINALS: Gold plating over nickel under plate.
- MARKING: Part number, date code, manufacturer's ID.
- TAPE & REEL option: Standard per EIA-418D. Consult factory for quantities.
- WEIGHT: Approximately 0.04 grams.
- See [Package Dimensions](#) on last page.

**PART NOMENCLATURE**

**SYMBOLS & DEFINITIONS**

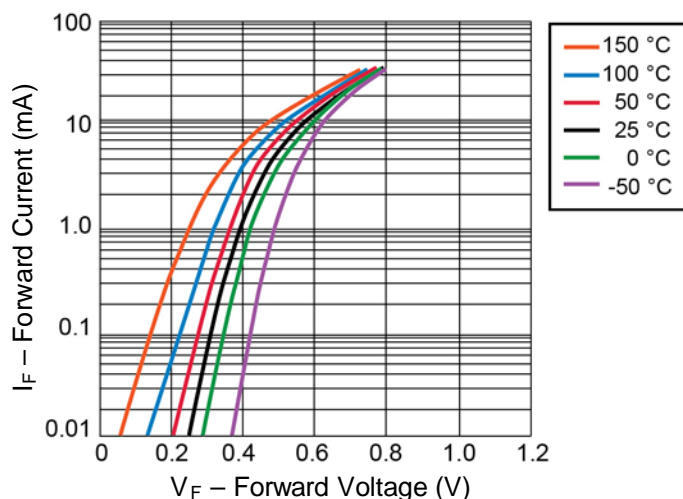
Symbol	Definition
C	Capacitance: The capacitance in pF at a frequency of 1 MHz and specified voltage.
f	frequency
$I_R$	Reverse Current: The dc current flowing from the external circuit into the cathode terminal at the specified voltage $V_R$ .
$I_O$	Average Rectified Output Current: The Output Current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
$t_{rr}$	Reverse Recovery Time: The time interval between the instant the current passes through zero when changing from the forward direction to the reverse direction and a specified decay point after a peak reverse current occurs.
$V_{(BR)}$	Breakdown Voltage: A voltage in the breakdown region.
$V_F$	Forward Voltage: A positive dc anode-cathode voltage the device will exhibit at a specified forward current.
$V_R$	Reverse Voltage: A positive dc cathode-anode voltage below the breakdown region.
$V_{RWM}$	Working Peak Reverse Voltage: The peak voltage excluding all transient voltages (ref JESD282-B). Also sometimes known historically as PIV.

**ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise noted**

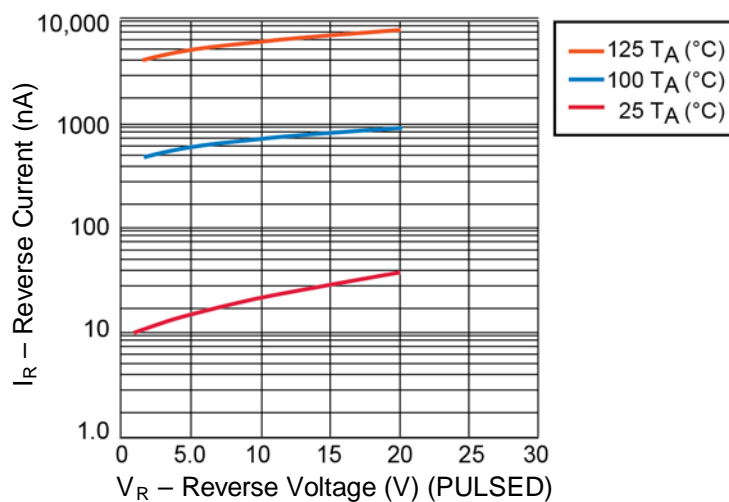
TYPE NUMBER	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM FORWARD VOLTAGE	MAXIMUM FORWARD VOLTAGE	WORKING PEAK REVERSE VOLTAGE	MAXIMUM REVERSE LEAKAGE CURRENT		MAXIMUM CAPACITANCE @ $V_R = 0$ VOLTS $f = 1.0$ MHz
	$V_{(BR)} @ 10 \mu A$	$V_F @ 1 mA$	$V_F @ I_F$	$V_{RWM}$	$I_R @ V_R$		$C_T$
	Volts	Volts	V @ mA	V (pk)	nA	Volts	pF
1N5711UB	70	0.41	1.0 @ 15	50	200	50	2.0
1N5712UB	20	0.41	1.0 @ 35	16	150	16	2.0

**NOTE:**

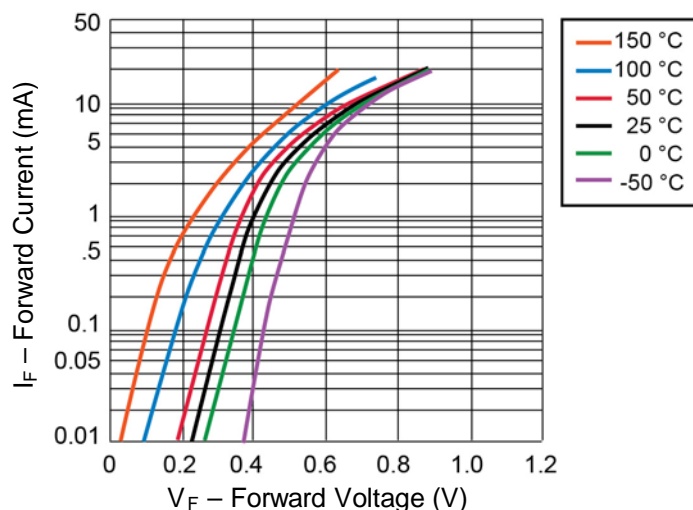
- Effective minority carrier lifetime ( $\tau$ ) is 100 pico seconds.

**GRAPHS**

**FIGURE 1**

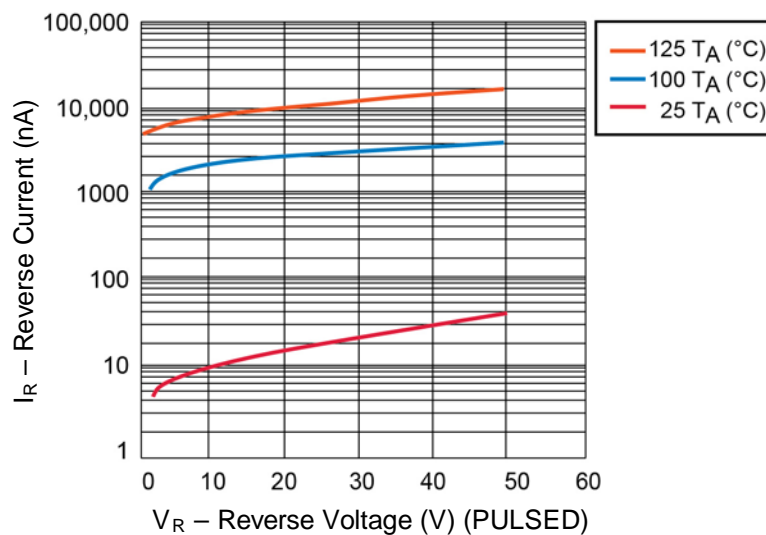
I-V Curve showing typical Forward Voltage Variation Temperature for the 1N5712 Schottky Diodes


**FIGURE 2**

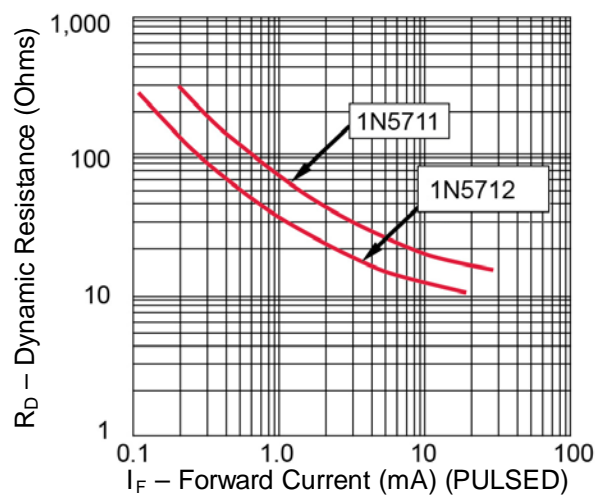
1N5712 Typical variation of Reverse Current ( $I_R$ ) vs Reverse Voltage ( $V_R$ ) at Various Temperatures

**GRAPHS**

**FIGURE 3**

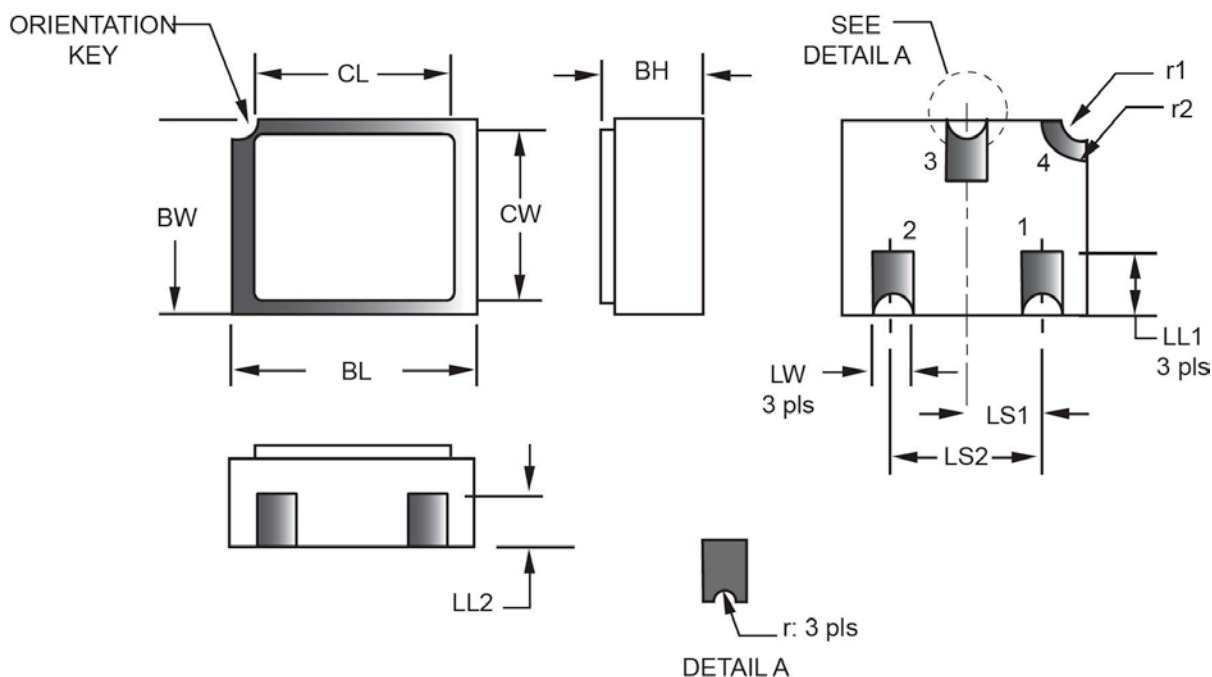
I – V curve showing typical Forward Voltage Variation  
With Temperature Schottky Diode 1N5711


**FIGURE 4**

1N5711 Typical Variation of Reverse Current ( $I_R$ ) vs Reverse Voltage ( $V_R$ )  
at Various Temperatures

**GRAPHS**


**FIGURE 5**  
Typical Dynamic Resistance ( $R_D$ ) vs Forward Current ( $I_F$ )

**PACKAGE DIMENSIONS**


Symbol	Dimensions				Note	Symbol	Dimensions				Note
	inch		millimeters				inch		millimeters		
	Min	Max	Min	Max			Min	Max	Min	Max	
BH	0.046	0.056	1.17	1.42		LS1	.035	.039	0.89	0.99	
BL	0.115	0.128	2.92	3.25		LS2	.071	.079	1.80	2.01	
BW	0.085	0.108	2.16	2.74		LW	.016	.024	0.41	0.61	
CL	-	0.128	-	3.25		r	-	.008	-	0.20	
CW	-	0.108	-	2.74		r1	-	.012	-	0.31	
LL1	0.022	0.038	0.56	0.97		r2	-	.022	-	.056	
LL2	0.017	0.035	0.43	0.89							

**NOTES:**

1. Dimensions are in inches. Millimeters are given for information only.
2. Ceramic package only.
3. Hatched areas on package denote metallized areas.
4. Pad 1 = Base, Pad 2 = Emitter, Pad 3 = Collector, Pad 4 = Shielding connected to the lid.
5. In accordance with ASME Y14.5M, diameters are equivalent to  $\Phi$ x symbology.

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