



ThinKey™ Silicon Schottky Diode

Qualified per MIL-PRF-19500/723

Qualified Levels:
JAN, JANTX, and
JANTXV

DESCRIPTION

This Defense Logistics Agency (DLA) qualified Schottky diodes offer great value for aerospace and defense applications requiring high density power and excellent heat dissipation (typically 0.85 - 0.95 degrees C per Watt (C/W)). The 1N6910UTK2AS through 1N6912UTK2AS device polarity is anode-to-strap (standard) and is also available optionally in 1N6910UTK2CS through 1N6912UTK2CS as cathode-to-strap. This part can also be ordered in a strapless version. Up-screening for high-reliability applications is also available. Microsemi also offers numerous other products to meet higher and lower power voltage regulation applications.

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

FEATURES

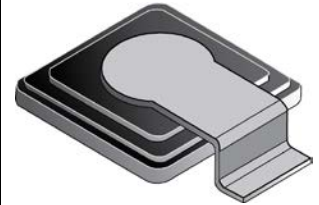
- JEDEC registered 1N6910 – 1N6912 number series.
- Oxide passivated structure.
- Guard ring protection for increased reverse energy capability.
- Epitaxial structure minimizes forward voltage drop.
- Hermetically sealed, low profile ceramic surface mount power package.
- JAN, JANTX, and JANTXV qualifications are available per MIL-PRF-19500/723. (See [part nomenclature](#) for all available options).
- RoHS compliant versions available (commercial grade only).

APPLICATIONS / BENEFITS

- Low package inductance.
- Very low thermal resistance.
- Also available with no strap as 1N6910UTK2, 1N6911UTK2 and 1N6912UTK2 by special request.
- Rugged ceramic and metal construction with no wire bonds.
- High surge capabilities and enable double-side cooling.

MAXIMUM RATINGS @ T_C = +25 °C, unless otherwise noted

Parameters / Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature Range	T _j and T _{stg}	-65 to +150	°C
Thermal Resistance Junction to Case (Anode-to-Strap)	R _{θJC}	0.85	°C/W
Thermal Resistance Junction to Case (Cathode-to-Strap) (Also applicable to strapless option)	R _{θJC}	0.95	°C/W
Working Peak Reverse Voltage: 1N6910UTK2,CS,AS 1N6911UTK2,CS,AS 1N6912UTK2,CS,AS	V _{RWM}	15 30 45	V
Average Rectified Output Current, T _C = +100 °C	I _O	25	A
Non-repetitive Peak Surge Current (t _p = 8.3 ms, half sine-wave)	I _{FSM}	400	A (pk)



**ThinKey™ 2
Package**

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MECHANICAL and PACKAGING

- CASE: Ceramic-molybdenum Thinkey 2.
- TERMINALS: Tin/lead solder or RoHS compliant matte/tin (on commercial grade only) plating.
- MARKING: Part number and polarity symbol.
- POLARITY: Standard is anode to strap. Reverse is cathode to strap.
- WEIGHT: Approximately 0.5 grams.
- See [package dimensions](#) on page 4.

PART NOMENCLATURE

JAN 1N6910 U TK 2 AS (e3)

Reliability Level
 JAN = JAN level
 JANTX = JANTX level
 JANTXV = JANTXV level
 Blank = Commercial

JEDEC type number
 (See [Electrical Characteristics](#)
 table)

Surface Mount package

RoHS Compliance
 e3 = RoHS compliant ([available on commercial grade only](#))
 Blank = non-RoHS compliant

Polarity
 AS=Anode to Strap (standard)
 CS=Cathode-to-Strap
 Blank=No Strap

Package Size

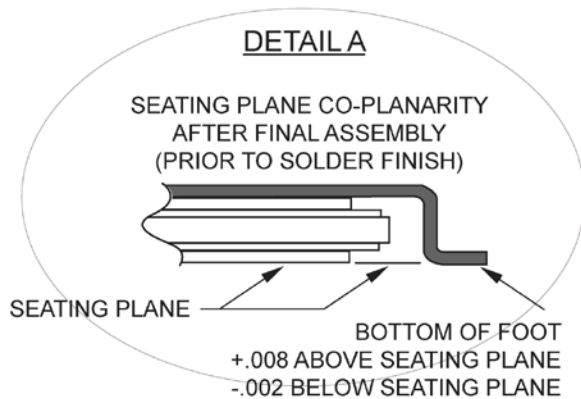
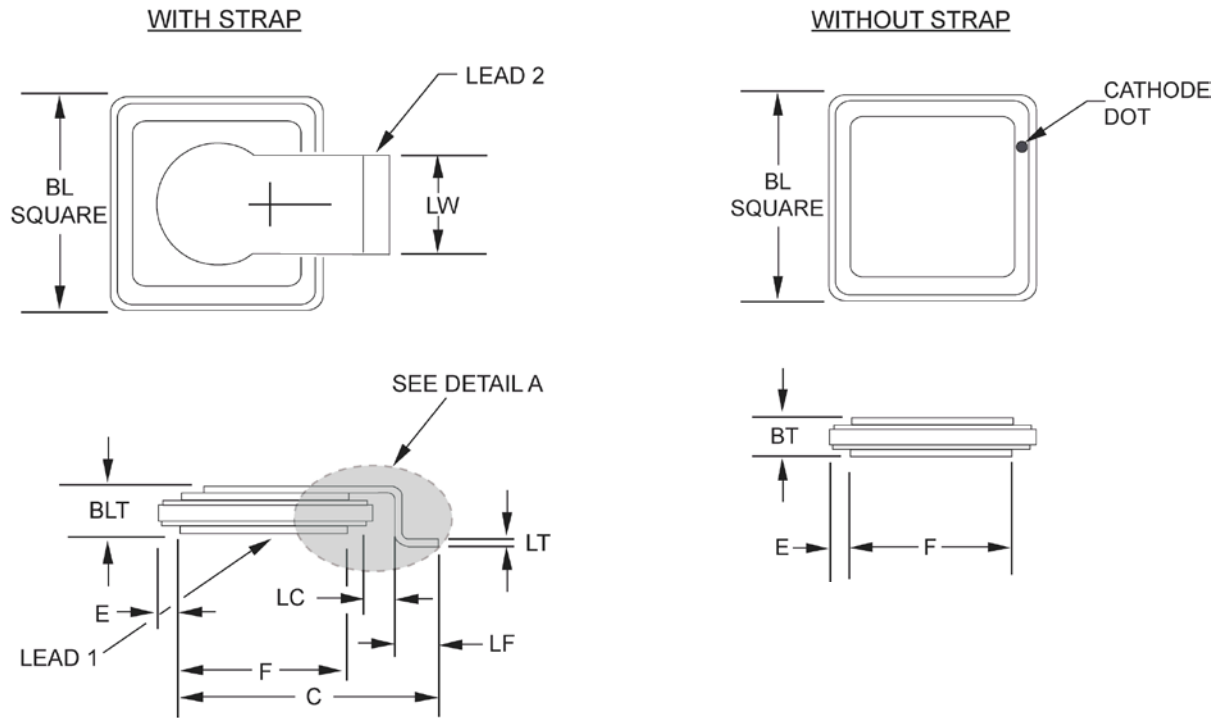
Package Class

SYMBOLS & DEFINITIONS

Symbol	Definition
f	frequency
I _F	Forward current, dc
I _R	Reverse current, dc
T _C	Case temperature
t _p	Pulse time
V _R	Reverse Voltage, dc

ELECTRICAL CHARACTERISTICS @ $T_A = +25\text{ }^\circ\text{C}$, unless otherwise noted

Parameters / Test Conditions	Symbol	MIN	MAX	Unit
Reverse (Leakage) Current $V_R = 15\text{ V}$, $T_C = 25\text{ }^\circ\text{C}$ $V_R = 30\text{ V}$, $T_C = 25\text{ }^\circ\text{C}$ $V_R = 45\text{ V}$, $T_C = 25\text{ }^\circ\text{C}$	I _{R1}	1N6910UTK2, CS, AS	1.2	mA
		1N6911UTK2, CS, AS		
		1N6912UTK2, CS, AS		
Reverse (Leakage) Current $V_R = 15\text{ V}$, $T_C = +125\text{ }^\circ\text{C}$ $V_R = 30\text{ V}$, $T_C = +125\text{ }^\circ\text{C}$ $V_R = 45\text{ V}$, $T_C = +125\text{ }^\circ\text{C}$	I _{R2}	1N6910UTK2, CS, AS	250	mA
		1N6911UTK2, CS, AS		
		1N6912UTK2, CS, AS		
Forward Voltage Pulse test, pulse width $t_p = 300\text{ }\mu\text{s}$ $I_F = 10\text{ A (pk)}$, $T_C = +25\text{ }^\circ\text{C}$	V _{F1}	1N6910UTK2, CS, AS	0.43	V
		1N6911UTK2, CS, AS	0.42	
		1N6912UTK2, CS, AS	0.52	
Forward Voltage $I_F = 25\text{ A (pk)}$, $T_C = +25\text{ }^\circ\text{C}$	V _{F2}	1N6910UTK2, CS, AS	0.52	V
		1N6911UTK2, CS, AS	0.54	
		1N6912UTK2, CS, AS	0.64	
Forward Voltage $I_F = 25\text{ A (pk)}$, $T_C = +125\text{ }^\circ\text{C}$	V _{F3}	1N6910UTK2, CS, AS	0.46	V
		1N6911UTK2, CS, AS	0.55	
		1N6912UTK2, CS, AS	0.63	
Junction Capacitance $V_R = 5\text{ V}$, $f = 1\text{ MHz}$, $V_{SIG} = 50\text{ mV (p-p)}$	C _J	1N6910UTK2, CS, AS	2000	pF
		1N6911UTK2, CS, AS	1250	
		1N6912UTK2, CS, AS	1000	
Breakdown Voltage Pulse test, $t_p = 35\text{ ms}$ $I_R = 5.0\text{ mA (pk)}$, $T_C = 25\text{ }^\circ\text{C}$	V _{(BR)1}	1N6910UTK2, CS, AS	16.5	V
		1N6911UTK2, CS, AS	33	
		1N6912UTK2, CS, AS	50	
Breakdown Voltage $I_R = 5.0\text{ mA (pk)}$, $T_C = -55\text{ }^\circ\text{C}$	V _{(BR)2}	1N6910UTK2, CS, AS	15	V
		1N6911UTK2, CS, AS	30	
		1N6912UTK2, CS, AS	45	

PACKAGE DIMENSIONS


Ltr	Dimensions			
	Inch		Millimeters	
	Min	Max	Min	Max
BL	0.230	0.250	5.84	6.35
BT	-	0.125	-	3.18
BLT	-	0.115	-	2.92
C	0.293	0.333	7.44	8.46
E	.023 NOM		.58 NOM	
F	0.171	0.181	4.34	4.60
LC	.040 NOM		1.02 NOM	
LF	0.055	0.075	1.40	1.91
LT	0.005	0.015	0.127	0.381
LW	0.085	0.115	2.16	2.92

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to Φ x symbology.

SEE PAD LAYOUT ON NEXT PAGE.

PAD LAYOUT

