



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

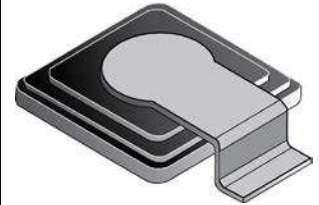
- JEDEC registered 1N6910 – 1N6912 number series.
- Oxide passivated structure.
- Guard ring protection for increased reverse energy capability.
- Epitaxial structure minimizes forward voltage drop.
- Hermetically sealed, low profile ceramic surface mount power package.
- JAN, JANTX, and JANTXV qualifications 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

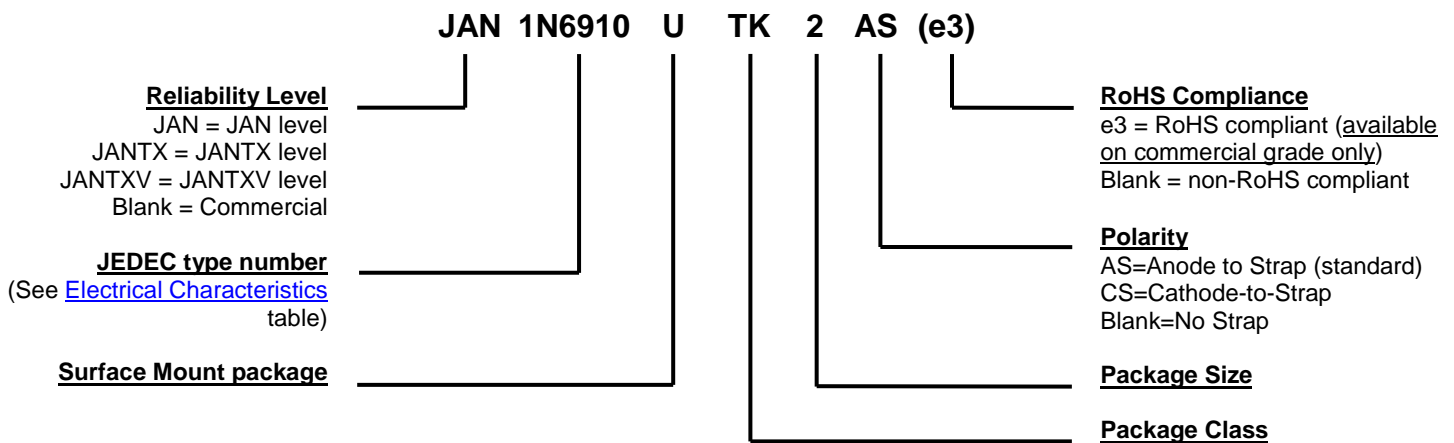
MSC – Lawrence
6 Lake Street,
Lawrence, MA 01841
Tel: 1-800-446-1158 or
(978) 620-2600
Fax: (978) 689-0803

MSC – Ireland
Gort Road Business Park,
Ennis, Co. Clare, Ireland
Tel: +353 (0) 65 6840044
Fax: +353 (0) 65 6822298

Website:
www.microsemi.com

MECHANICAL and PACKAGING

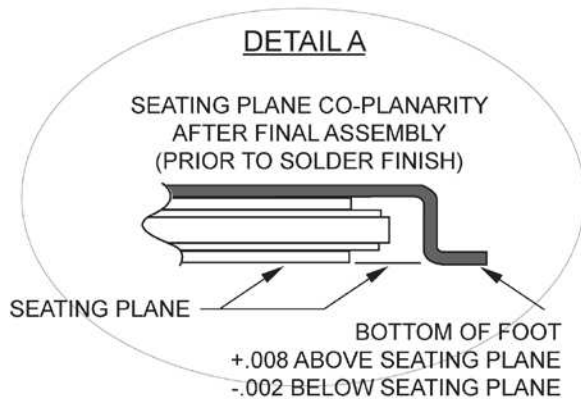
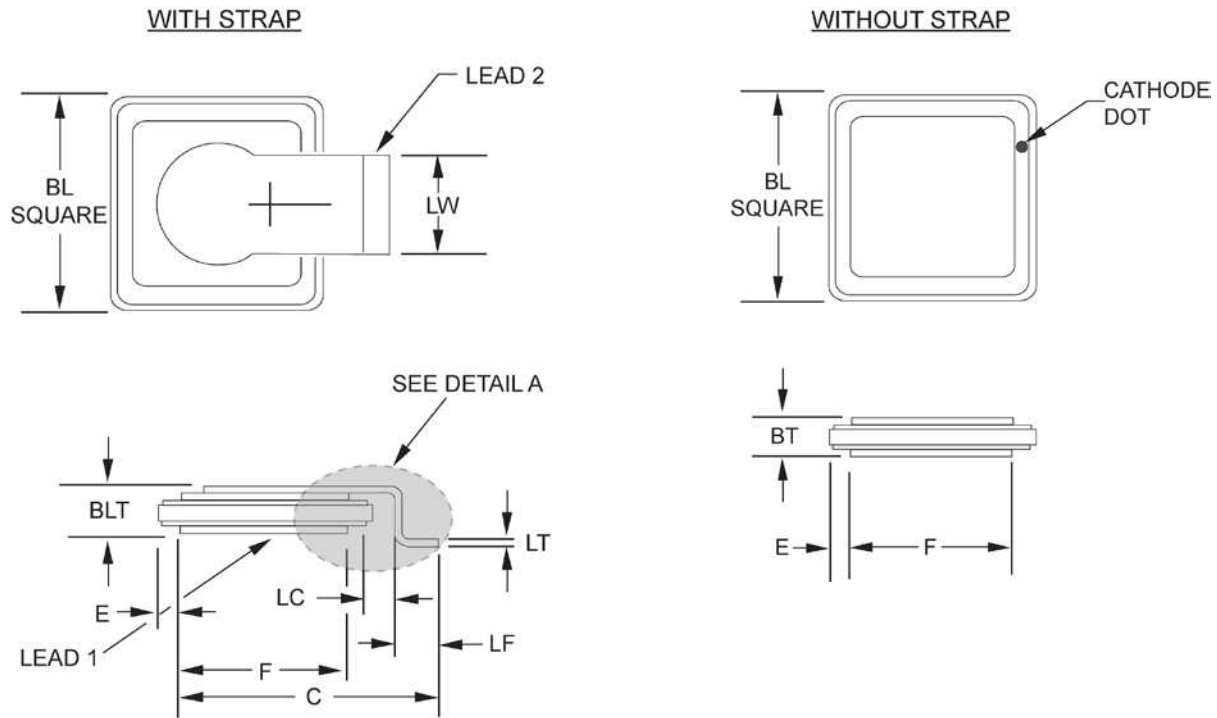
- CASE: Ceramic-molybdenum Thinkey 2.
- TERMINALS: Tin/lead solder or RoHS compliant matte/tin (on commercial grade only) plating.
- MARKING: Part number and polarity symbol.
- POLARITY: Standard is anode to strap. Reverse is cathode to strap.
- WEIGHT: Approximately 0.5 grams.
- See [package dimensions](#)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

PART NOMENCLATURE

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

