

N15UT2020P3

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Surface Mount Uni-Directional TVS For ESD Protection Diode : 15V

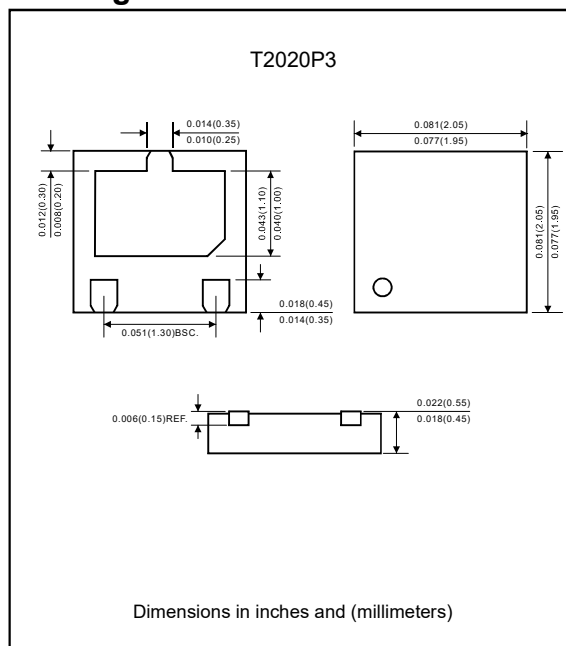
Features

- Low leakage current : 10nA @ V_{RWM} (Maximum).
- Low operating and clamping voltage
- Each I/O pin can withstand over 1000 ESD strikes for $\pm 8kV$ contact discharge.
- Provide transient protection:
IEC 61000-4-2 (ESD) $\pm 30kV$ (Air), $\pm 30kV$ (Contact).
IEC 61000-4-4 (EFT) 80A(5/50ns).
IEC 61000-4-5 (Surge) 150A(8/20us).
- RoHS compliant.
- Suffix "-H" indicates Halogen-free part, ex.N15UT2020P3-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, T2020P3
- Terminals : Solder plated, solder able per MIL-STD-750, Method 2026.
- Mounting Position : Any
- Weight : Approximated 0.005 gram

Package outline



Absolute maximum ratings (At $T_A=25^\circ C$ unless otherwise specified)

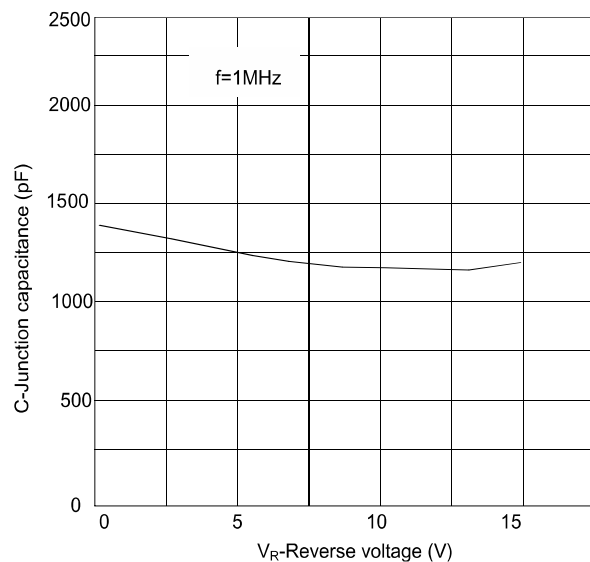
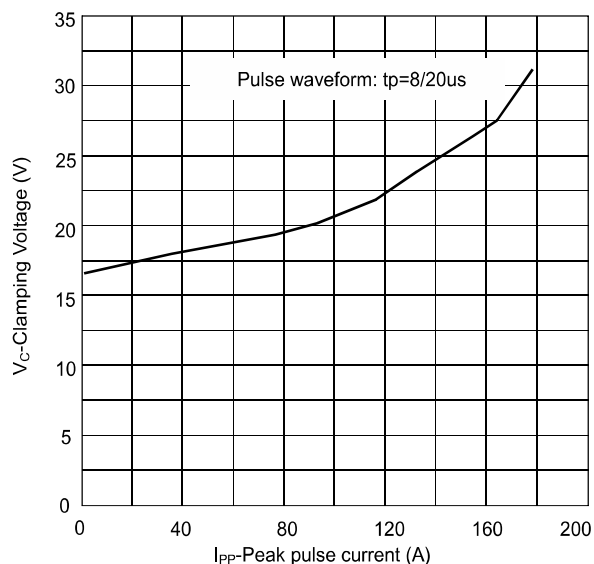
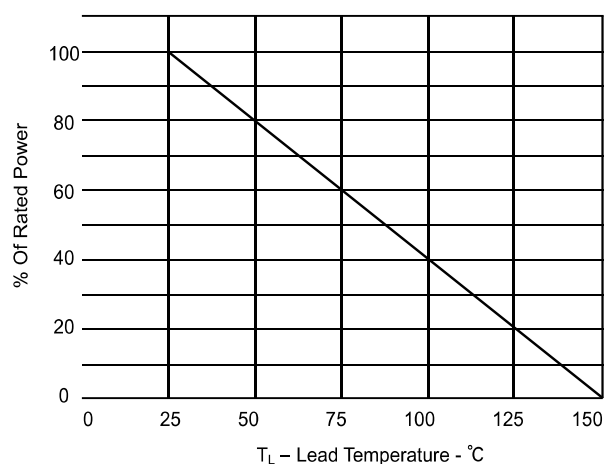
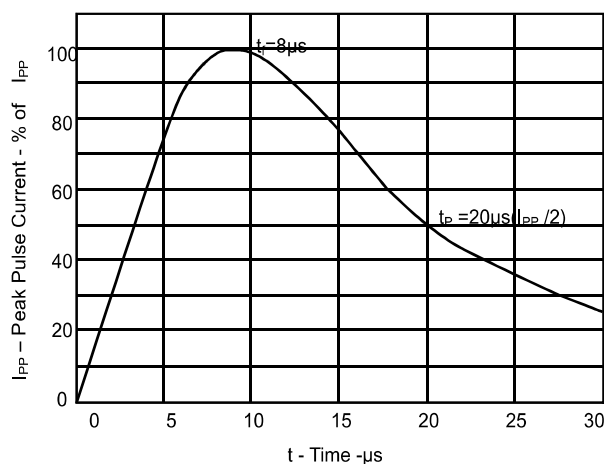
Parameter	Symbol	Value	Unit
Peak pulse power ($t_p=8/20\mu s$)	P_{PP}	4500	W
Electrostatic discharge voltage (IEC61000-4-2 Contact & Air)	V_{ESD}	± 30	KV
Peak pulse current ($t_p=8/20\mu s$, IEC61000-4-5)	I_{PP}	150	A
Operating temperature	T_{OPT}	+150	$^\circ C$
Storage temperature	T_{STG}	-55 to +150	$^\circ C$

Electrical characteristics (At $T_A=25^\circ C$ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Reverse stand-off voltage		V_{RWM}			15	V
Reverse leakage current	$V_{RWM} = 15V$	I_R			10	nA
Breakdown voltage	$I_T = 1mA$	V_{BR}	16		19	V
Forward voltage	$I_F = 1mA$	V_F			0.8	V
Clamping voltage	$I_{PP} = 1A, t_p = 8/20\mu s$	V_C			20	V
	$I_{PP} = 150A, t_p = 8/20\mu s$				30	
Junction capacitance	$V_R = 0V, f = 1MHz$	C_J		1245		pF

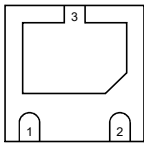
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Rating and characteristic curves

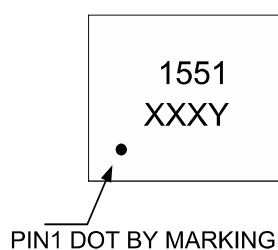


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Pinning information

Pin	Pin Schematic	Circuit Daiagram
Pin 1, 2 : Anode Pin 3 : Cathode	 Transparent Top View	

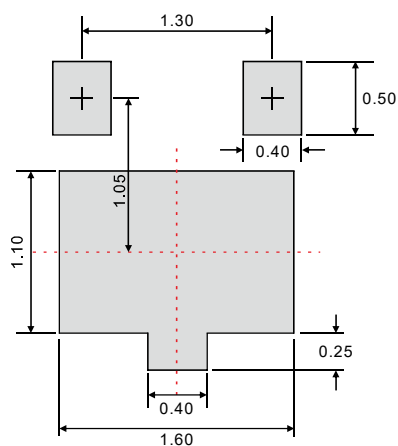
Marking



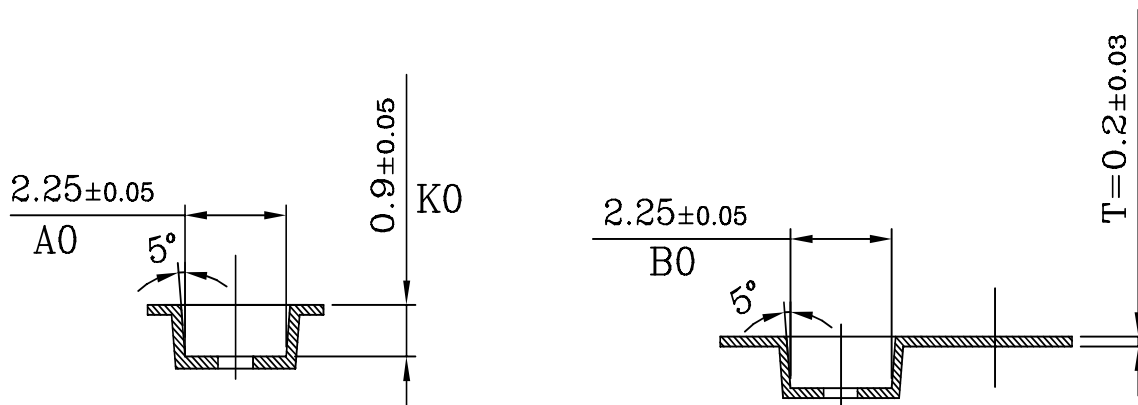
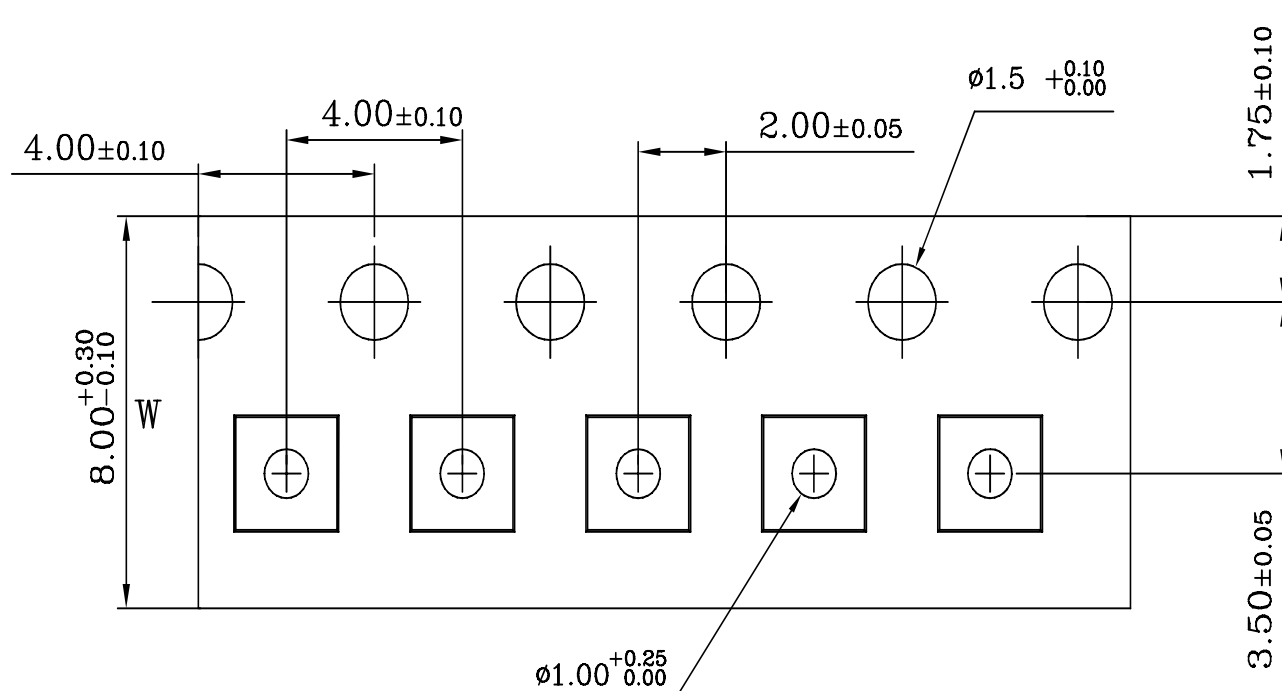
Note:

- (1) “1551” is part number, fixed.
- (2) “XXX” is the last 3 characters of the wafer's Lot No.,
“Y” is the internal code.

Suggested solder pad layout



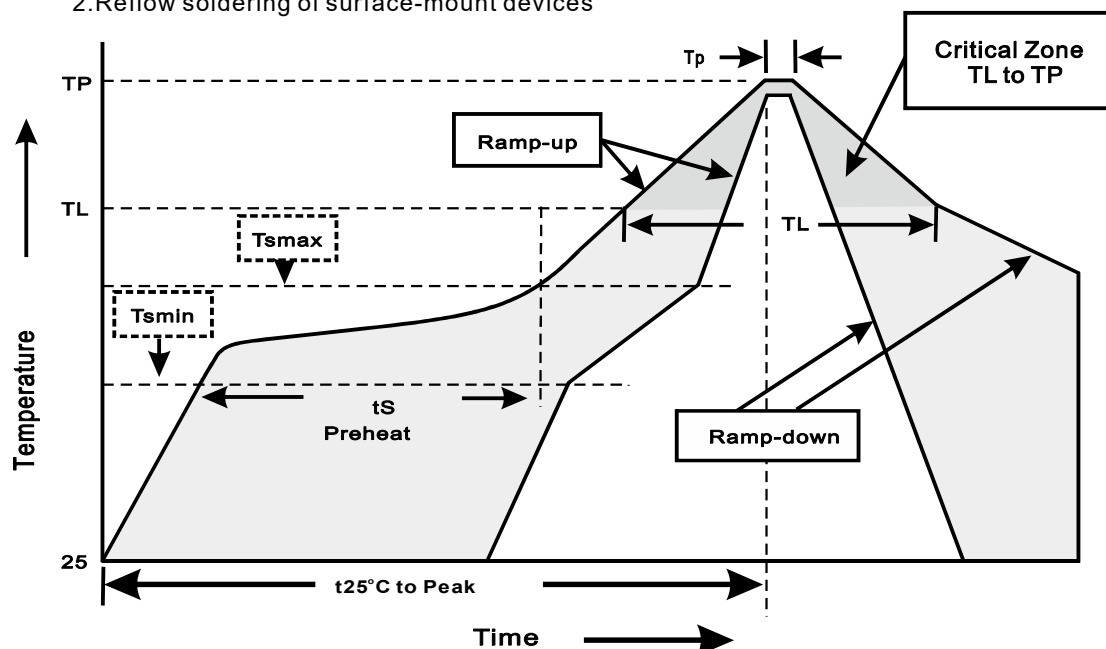
Dimensions in millimeters

N15UT2020P3**Packing information**

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Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{smin}) -Temperature Max(T _{smax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smax} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes