

POWER DISCRETES

Description

The 1N64xx series of transient voltage suppressors are designed to protect military and commercial electronic equipment from overvoltages caused by lightning, ESD, EFT, inductive load switching, and EMP. These devices are constructed using a p-n junction TVS diode in a hermetically sealed, voidless glass package. The hermetically sealed package provides high reliability in harsh environmental conditions. TVS diodes are further characterized by their high surge capability, low operating and clamping voltages, and a theoretically instantaneous response time. This makes them ideal for use as board level protection for sensitive semiconductor components. These devices are DESC QPL qualified to MIL-S-19500/551.

Features

- ◆ 500 Watts peak pulse power ($t_p = 10/1000\mu s$)
- ◆ Voidless hermetically sealed glass package
- ◆ Metallurgically bonded
- ◆ High surge capacity
- ◆ Unidirectional
- ◆ Available in JTX, and JTXV versions per MIL-S-19500/551

Applications

- ◆ Aerospace and industrial electronics
- ◆ Board level protection
- ◆ Airborne systems
- ◆ Shipboard systems
- ◆ Ground systems

Mechanical Characteristics

- ◆ Hermetically sealed glass package

Absolute Maximum Ratings

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 10 \times 1000\mu s$)	Ppk	500	Watts
Storage Temperature Range	T_{STG}	-65 to +175	°C
Steady-State Power Dissipation @ TL = 75°C (3/8")	PD	3	Watts

POWER DISCRETES
Electrical Characteristics

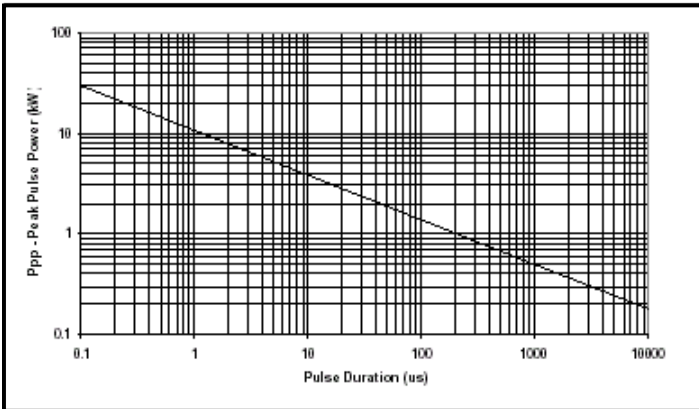
 Electrical specifications @ $T_A = 25^\circ\text{C}$ unless otherwise specified.

Device Type	Reverse Standoff Voltage V_{RWM}	Reverse Leakage Current I_R	Minimum Breakdown Voltage $V_{BR} @ I_T$	Test Current I_T	Maximum Clamping Voltage $V_C @ I_{PP}$	Peak Pulse Current I_{PP} $T_P = 1\text{mS}$	Peak Pulse Current I_{PP} $T_P = 20\mu\text{S}$	Temp. Coef. of V_{BR} αV_Z
	V	μA	V	mA	V	A	A	%/°C
1N6461US	5	3000	5.6	25	9.0	56	315	0.040
1N6462US	6	2500	6.5	20	11.0	46	258	0.040
1N6463US	12	500	13.6	5	22.6	22	125	0.050
1N6464US	15	500	16.4	5	26.5	19	107	0.060
1N6465US	24	50	27.0	2	41.4	12	69	0.084
1N6466US	30.5	3	33.0	1	47.5	11	63	0.093
1N6467US	40.3	2	43.7	1	63.5	8	45	0.094
1N6468US	51.6	2	54.0	1	78.5	6	35	0.096

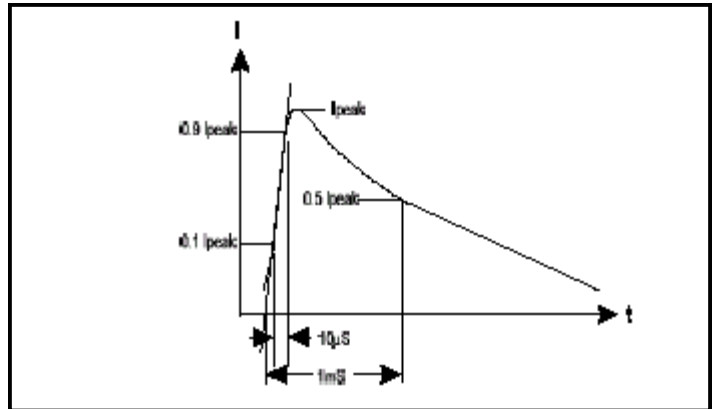
POWER DISCRETES

Electrical Characteristics

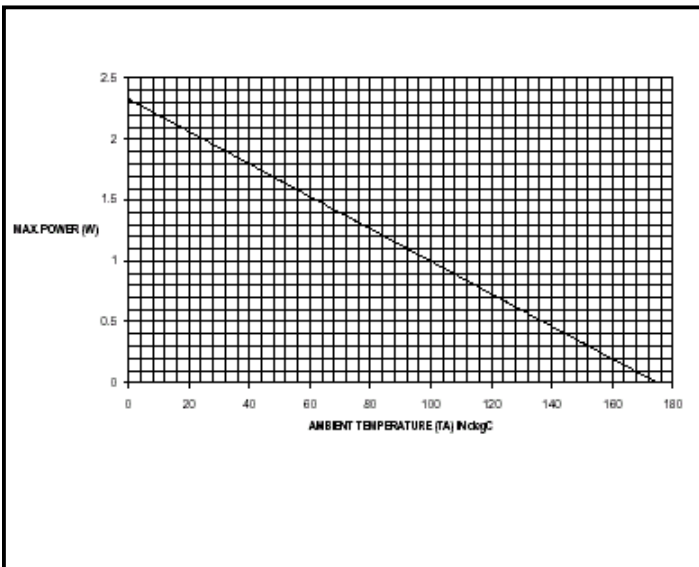
PEAK PULSE POWER vs. PULSE TIME



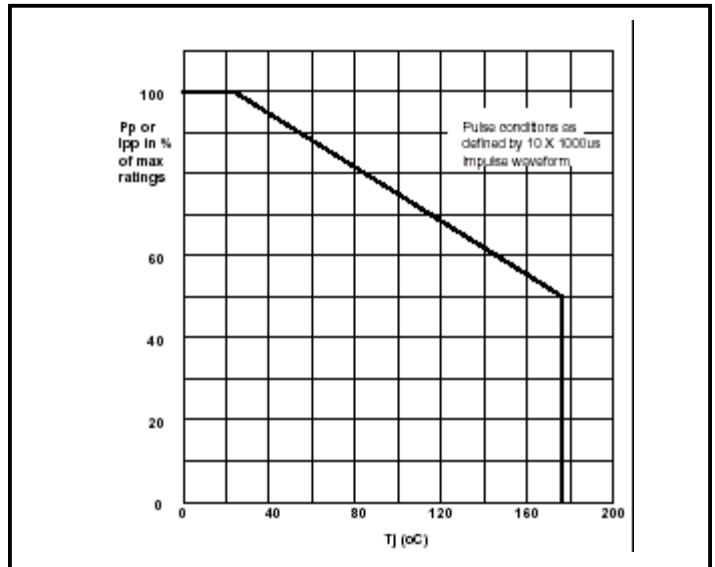
10 x 1000μs IMPULSE WAVEFORM



STEADY STATE DERATING CHARACTERISTICS FOR FREE AIR MOUNTING



PULSE DERATING CURVE



POWER DISCRETES

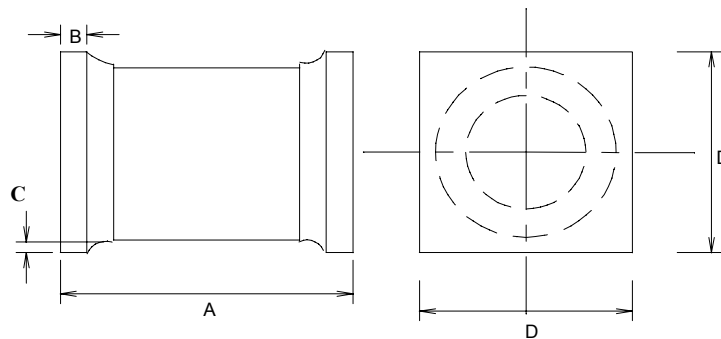
Ordering Information

Part Number	Description
1N6461US, 1N6462US, 1N6463US, 1N6464US, 1N6465US, 1N6466US, 1N6467US, 1N6468US	Surface Mount (US) ⁽¹⁾

Note:

(1) Available in trays and tape and reel packaging. Please consult factory for quantities.

Outline Drawing



	Dimensions			
	1N6461US - 1N6468US			
	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.200	0.225	5.08	5.72
B	0.019	0.028	0.48	0.71
C	0.003	-	0.08	-
D	0.137	0.148	3.48	3.76

Notes:

- (1) Dimensions are in inches.
- (2) Metric equivalents are given for general information only.

Contact Information

Semtech Corporation
 Power Discrettes Products Division
 200 Flynn Road, Camarillo, CA 93012
 Phone: (805)498-2111 FAX (805)498-3804