ECTHCAG15VU

1-Line High Power TVS Diode

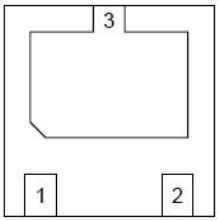
The ECTHCAG15VU is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. The ECTHCAG15VU complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into a 3-pin DFN2020-3 lead-free package. The leads are finished with NiPdAu. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multi media card interfaces.

Features

- Protects one I/O lines
- 6500W peak pulse power (8/20uS)
- Low leakage: nA level
- Ultra low clamping voltage
- One power line protects

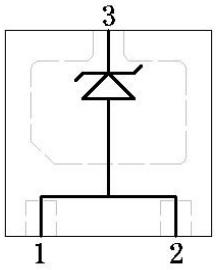
Main applications

- Power Management
- Industrial Application
- Power Supply Protection



Protection solution to meet

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-5 (Lightning) 180A (8/20μs)



Ordering Information

Device	Qty per Reel	Reel Size
ECTHCAG15VU	3000	7 Inch

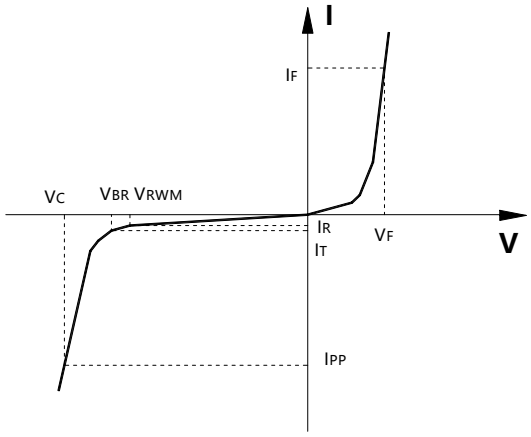
Maximum ratings (Temp=25℃ Unless Otherwise Specified)			
Parameter	**Symbol**	**Value**	**Unit**
Peak Pulse Power (tp=8/20μs waveform)	P_{ppp}	6500	W
Peak Pulse Current (8/20μs)	Ipp	180	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied,damage may occur and reliability may be affected.

**Other voltages may be available upon request.*

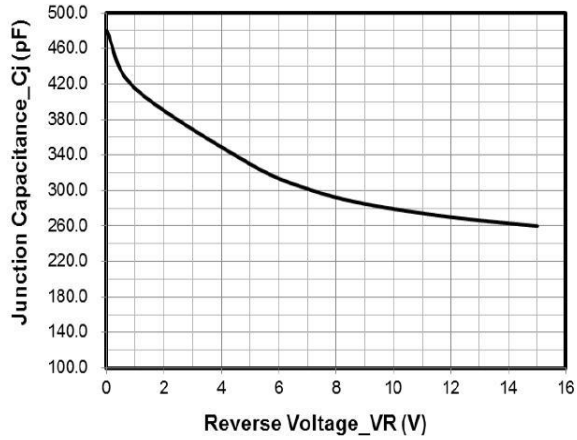
1. Non-repetitive current pulse, per Figure 1.

Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance

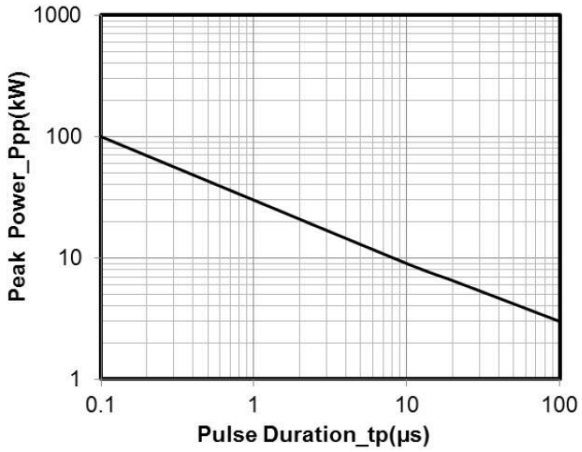


Electrical characteristics (Temp=25℃ Unless Otherwise Specified)						
Symbol	**Parameter**	**Conditions**	**Min.**	**Typ.**	**Max.**	**Units**
V_{RWM}	Reverse Working Voltage				15	V
V_{BR}	Breakdown Voltage	I_T = 1mA	16.5			V
I_R	Reverse Leakage Current	V_{RWM} = 15V			1.0	uA
V_C	Clamping Voltage	I_{PP} = 20A (8 x 20μs pulse)			21	V
		I_{PP} =180A (8 x 20μs pulse)			36	V
V_C	Clamping Voltage	VR = 0V, f = 1MHz				pF
C_J	Junction Capacitance			480	15	V

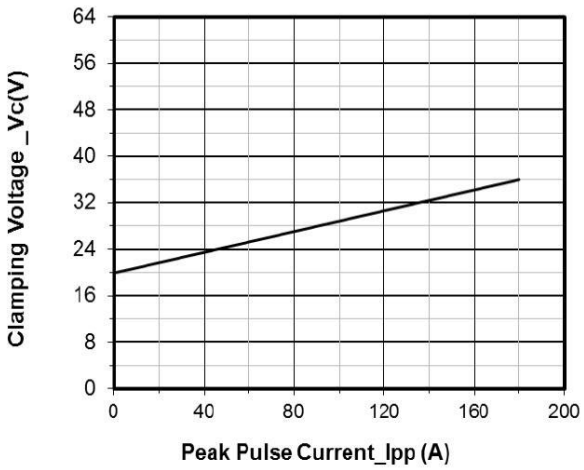
Typical electrical characterist applications



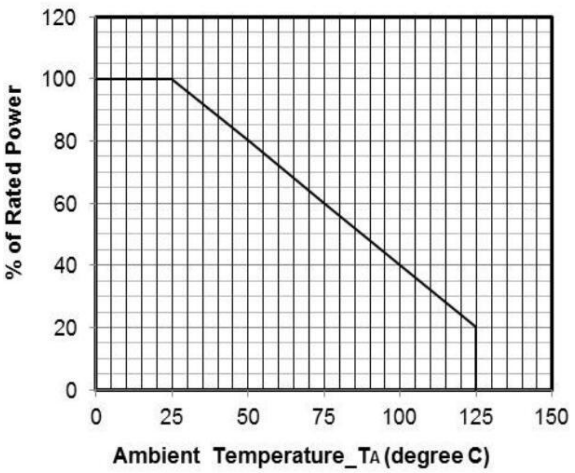
Novction Capacitance vs. Reverse Voltage



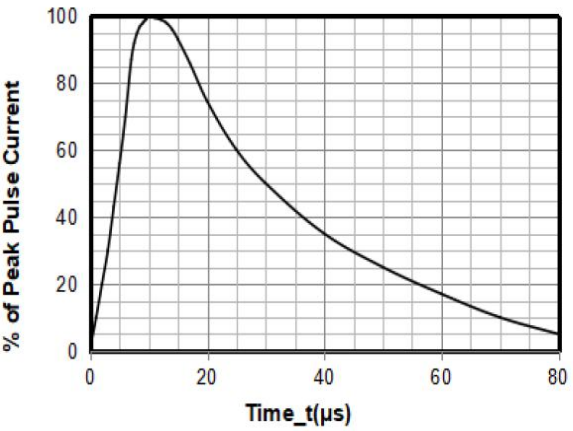
Peak Pulse Power vs. Pulse Time



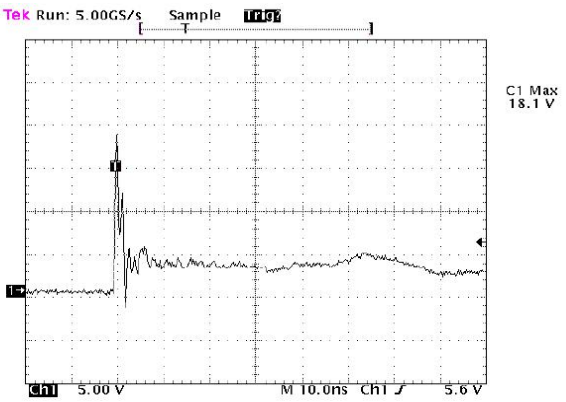
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



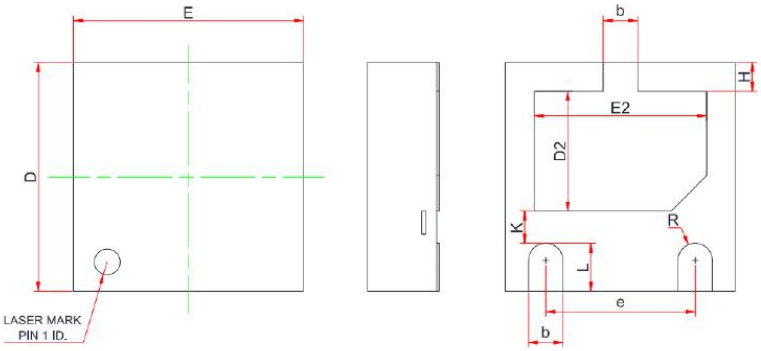
Note：Data is taken with a 10x attenuator

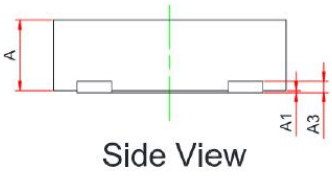
ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

Package Information

DFN2020-3L





SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.50	0.60	0.65
A1	0.00	0.02	0.05
A3		0.10REF	
b	0.25	--	0.35
D	1.90	--	2.10
E	1.90	--	2.10
D2	0.95	--	1.15
E2	1.40	--	1.60
e	1.20		1.40
H	0.20	--	0.30
K	0.20		0.40
L	0.35	--	0.45
R	0.13	--	--

Recommended Pad outline