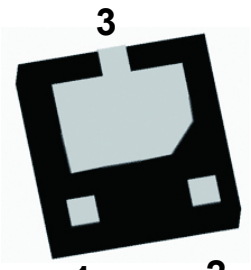
Desicription

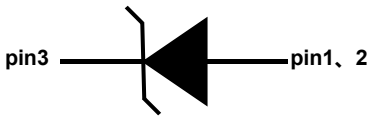
◆ This a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. It is assembled into a 3-pin DFN2020-3 lead-free package. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular



DFN2020-3L

Features

◆ IEC61000-4-2(ESD):30KV Max Air
30KV Max Contact
◆ IEC61000-4-5(Surge): 300A (8/20us)
◆ Very low reverse current:I_R<1uA(typical)
◆ Halogen free ,Lead free and RoHs



Circuit Diagram

Application

◆ Cellular phones
◆ Power Management
◆ Industrial Application
◆ Power Supply Protection
◆ Portable devices
◆ Smart home
◆ Robot

Order information

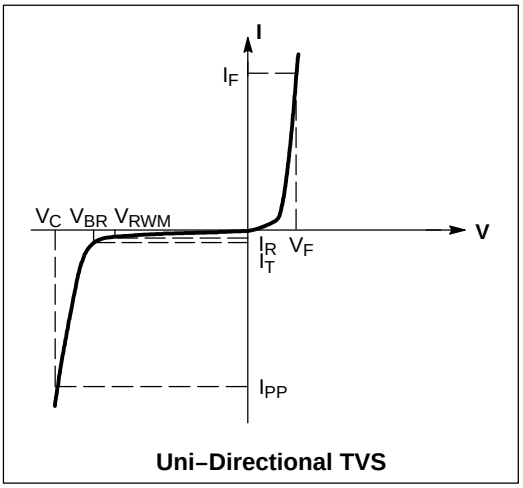
Model	Marking	Package	shipping
ESD6V7J202TUP	N07A	DFN2020-3L	3000/Tape&Reel

Electrical characteristic(T=25℃，unless otherwise specified)

Parameter	Symbol	Conditions	Min.	TYP.	Max.	Units
Reverse stand-off voltage	V_{RWM}				±6.7	V
Reverse leakage current	I_R	V_{RWM}=6.7V			1.0	uA
Reveres breakdown voltage	V_{BR} Pin3~Pin1/2	I_T=1mA	7.5	8.5		V
Clamping voltage	V_C Pin3~Pin1/2	I_{PP}=1A(8/20us)			9.5	V
		I_{pp}= 300A(8/20us)		24.0	25.0	V

Electrical characteristic(T=25℃，unless otherwise specified)

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F

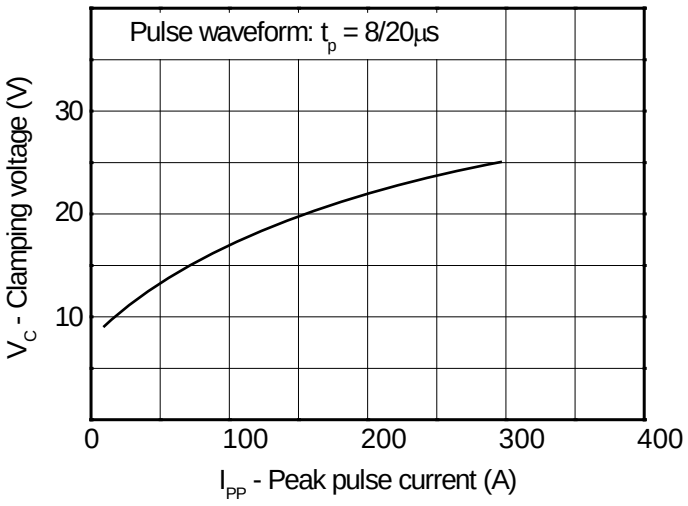


Uni–Directional TVS

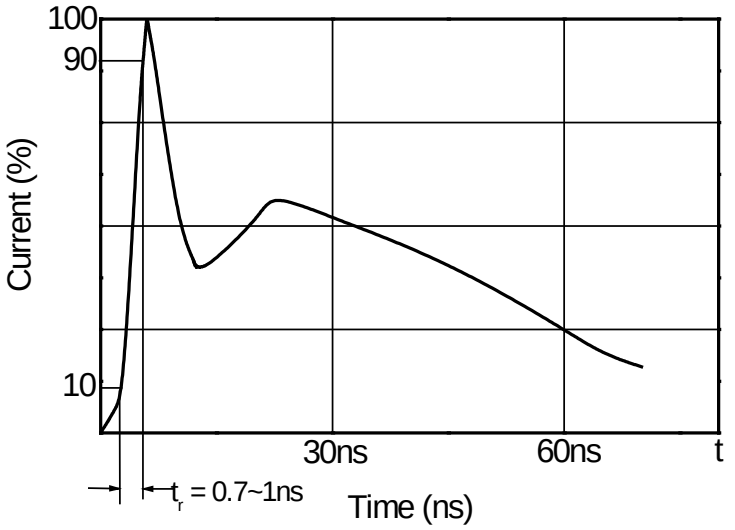
Maximum Rating

Rating	symbol	value	Units
Peak Pulse Current(tp=8/20us)	I_{pp}	300	A
ESD per IEC61000-4-2(Contact)	V_{ESD}	±30	KV
ESD per IEC61000-4-2(Air)		±30	
Operating Temperature	T_J	-55~125	℃
Storage Temperature	T_{STG}	-55~155	℃

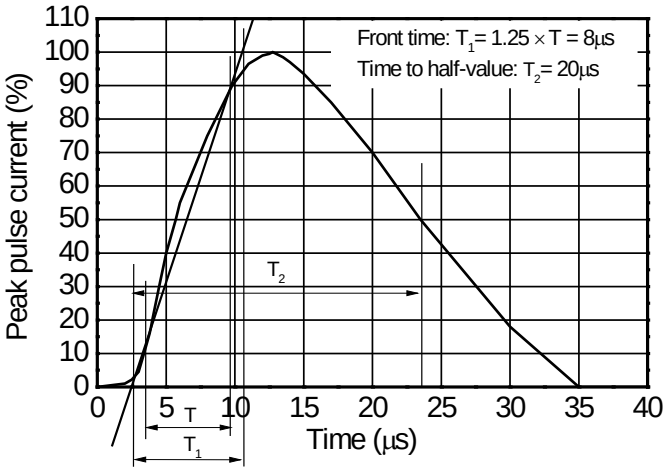
Typical characteristic



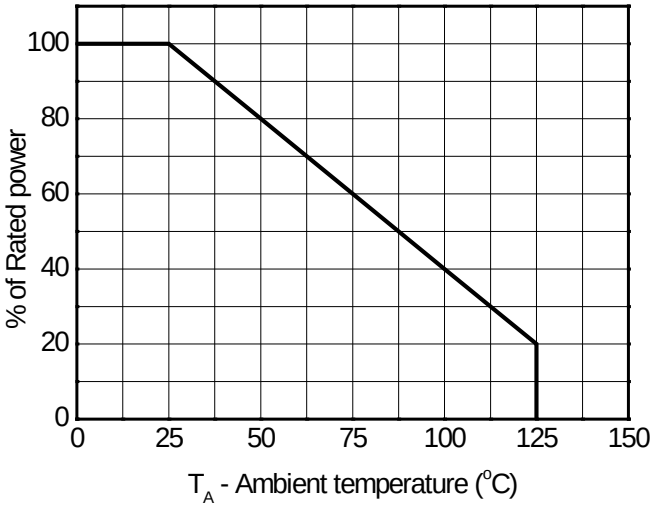
Clamping voltage vs. Peak pulse current



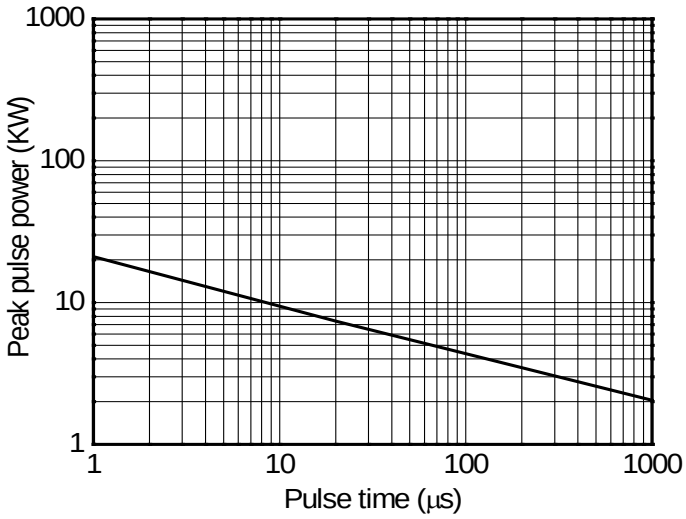
Contact discharge current waveform per IEC61000-4-2



8/20μs waveform per IEC61000-4-5



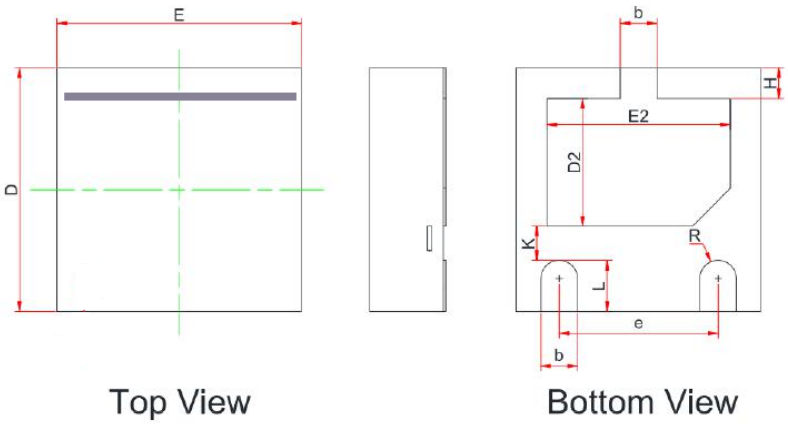
Power derating vs. Ambient temperature



Non-repetitive peak pulse power vs. Pulse time

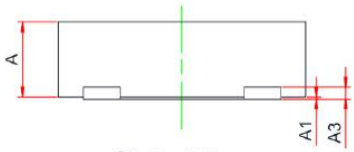
Dimension outline Unit:mm

DFN2020-3L



Top View

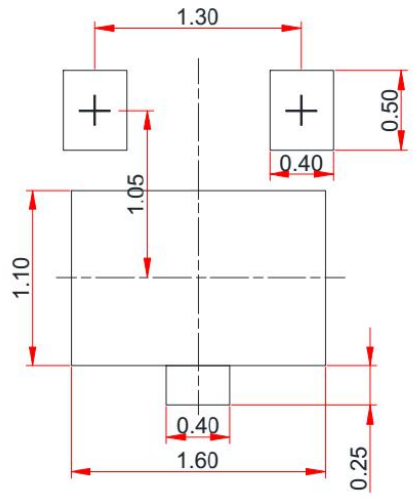
Bottom View



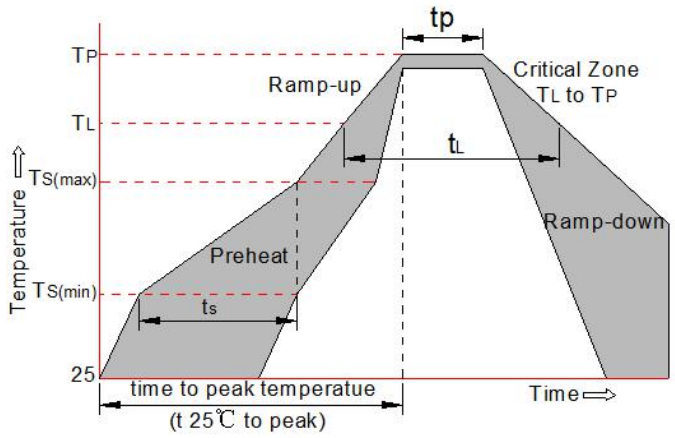
Side View

SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.55	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	--	--

Recommened Mounting Pad Layout Unit:mm



Soldering Parameters



Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃