



DWGU0512D6-Q ESD Protection Diode

Feature

- Uni-directional ESD protection of one line
- 1800Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 5V
- Junction Capacitance: 600pF (Typ)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
- IEC 61000-4-5 (Lightning) 160A (8/20 μs)
- IEC61000-4-4 (EFT) 120A (5/50ns)

Application

- Mobile Phones
- Battery Protection
- Power Line Protection
- Vbat pin for Mobile Devices
- Hand Held Portable Applications

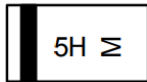
Mechanical Data

- Package: DFN1610-2L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
DWGU0512D6-Q	DFN1610-2L		8000 Tape & Reel	7 inches



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

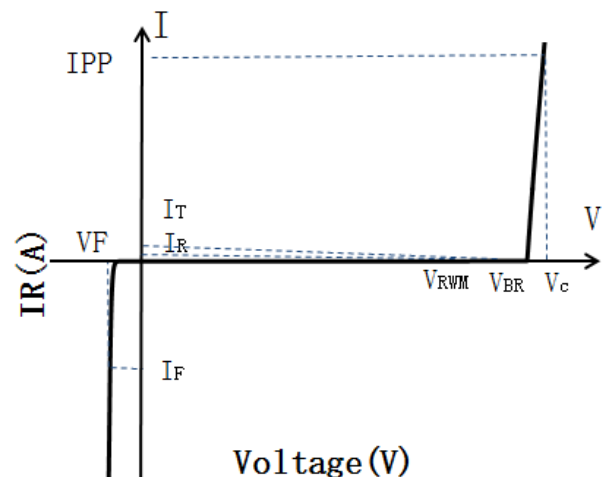
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PK}	1800	W
Peak Pulse Current (8/20 μs)	I_{PP}	160	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 30 ± 30	kV
Operating Temperature Range	T_J	-55 to $+125$	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to $+150$	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	5.4	6.0		V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 100\text{A}$ (8 x 20 μs pulse)			9.8	V
Clamping Voltage	V_C	$I_{PP} = 160\text{A}$ (8 x 20 μs pulse)		10.0	13.0	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		600	800	pF

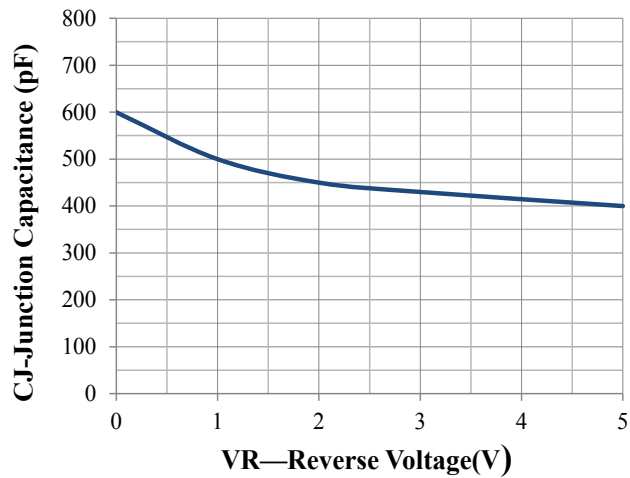
Electrical Parameters

Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C
I_F	Forward Current
V_F	Forward Voltage @ I_F

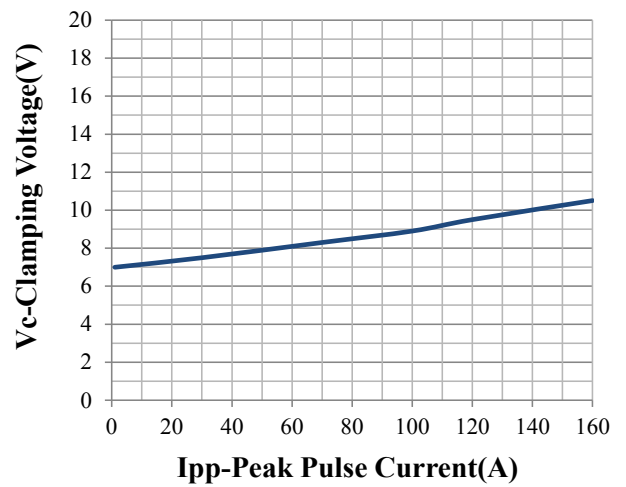




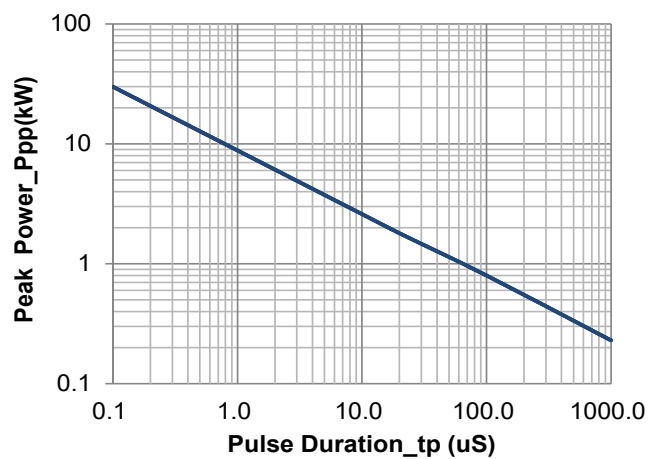
Typical Characteristics



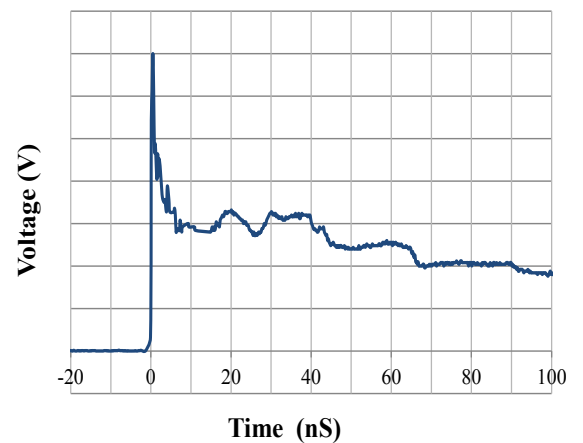
Junction Capacitance vs. Reverse Voltage



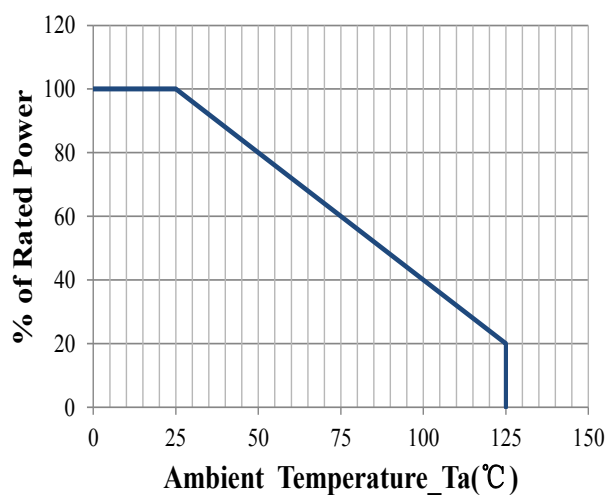
Clamping Voltage vs. Peak Pulse Current



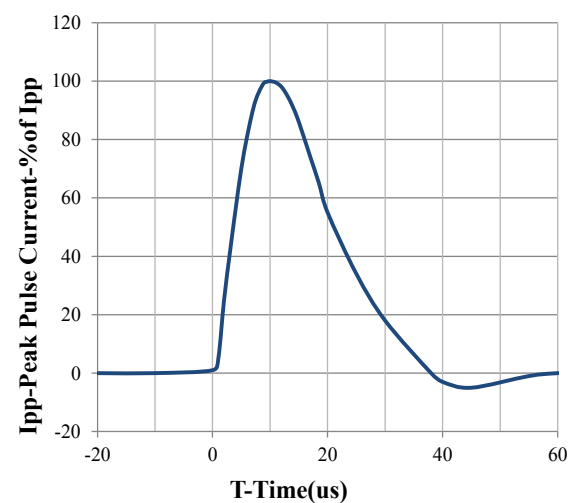
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



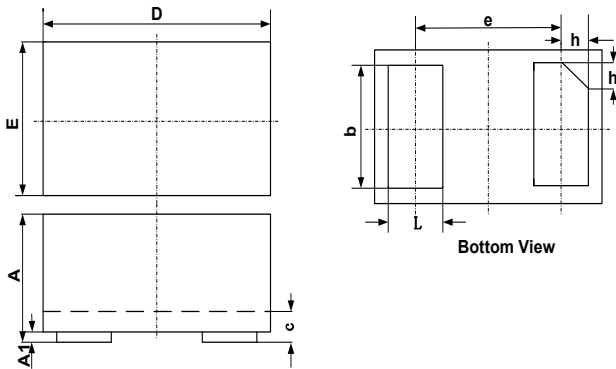
Power Derating Curve



8 X 20us Pulse Waveform



DFN1610-2L Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018
h	0.15	0.20	0.25	0.006	0.008	0.010