

Low Clamping Voltage Uni-directional ESD / Transient Protection Diodes

FEATURES

- Transient protection for data lines to
 - IEC61000-4-2(ESD) : Air mode $\pm 30\text{kV}$ / Contact mode $\pm 30\text{kV}$
 - IEC61000-4-5(Surge) : $20\text{A}(t_p=8/20\mu\text{s})$
- Total capacitance $C_T = 160\text{pF}(\text{Typ.})$
- Uni-directional, symmetrical working voltage up to : $V_{\text{RWM}} = 7.6\text{V}$
- Ultra small Size $1.0 \times 0.6 \times 0.4\text{mm}$
- Suffix U : Qualified to AEC-Q101.
 - ex) PG08GSUL2-RTL/HU
- Non Suffix : ULP-2(3) Package ex) PG08GSUL2-RTL/H
- Suffix U : ULP-2(3) Package&Qualified to AEC-Q101 ex) PG08GSUL2-RTL/HU
- Suffix R : ULP-2(4) Package ex) PG08GSUL2-RTL/HR
- Suffix UR : ULP-2(4) Package&Qualified to AEC-Q101 ex) PG08GSUL2-RTL/HUR
- Suffix P : ULP-2(5) Package ex) PG08GSUL2-RTL/HP
- Suffix UP : ULP-2(5) Package&Qualified to AEC-Q101 ex) PG08GSUL2-RTL/HUP
- Suffix UJ : ULP-2(6) Package&Qualified to AEC-Q101 ex) PG08GSUL2-RTL/HUJ



ULP-2 (leadless-type)



1. ANODE 2. CATHODE

Pin configurations (Uni-directional)

PRODUCT DESCRIPTION

- Molding compound flammability rating : UL 94V-0
- Pb-Free, Halogen-Free, RoHs Compliant

Package dimensions (ULP-2)	Package dimensions (ULP-2(3))	Package dimensions (ULP-2(4))	Package dimensions (ULP-2(5))	Package dimensions (ULP-2(6))																																																																																						
<table><tr><th>DIM</th><th>MILLIMETERS</th></tr><tr><td>A</td><td>1.0 ± 0.05</td></tr><tr><td>B</td><td>0.6 ± 0.05</td></tr><tr><td>C</td><td>0.4 ± 0.05</td></tr><tr><td>C1</td><td>0.38 ± 0.05</td></tr><tr><td>D</td><td>0.54 ± 0.03</td></tr><tr><td>E</td><td>0.25 ± 0.03</td></tr><tr><td>G</td><td>0.65 ± 0.03</td></tr><tr><td>H</td><td>0.05</td></tr><tr><td>I</td><td>Max 0.05</td></tr></table>	DIM	MILLIMETERS	A	1.0 ± 0.05	B	0.6 ± 0.05	C	0.4 ± 0.05	C1	0.38 ± 0.05	D	0.54 ± 0.03	E	0.25 ± 0.03	G	0.65 ± 0.03	H	0.05	I	Max 0.05	<table><tr><th>DIM</th><th>MILLIMETERS</th></tr><tr><td>A</td><td>1.0 ± 0.05</td></tr><tr><td>B</td><td>0.6 ± 0.05</td></tr><tr><td>C</td><td>0.4 ± 0.05</td></tr><tr><td>D</td><td>0.48 ± 0.05</td></tr><tr><td>E</td><td>0.23 ± 0.05</td></tr><tr><td>e</td><td>Min 0.125</td></tr><tr><td>G</td><td>0.65 ± 0.03</td></tr><tr><td>H</td><td>Typ 0.06</td></tr></table>	DIM	MILLIMETERS	A	1.0 ± 0.05	B	0.6 ± 0.05	C	0.4 ± 0.05	D	0.48 ± 0.05	E	0.23 ± 0.05	e	Min 0.125	G	0.65 ± 0.03	H	Typ 0.06	<table><tr><th>DIM</th><th>MILLIMETERS</th></tr><tr><td>A</td><td>1.00 ± 0.10</td></tr><tr><td>B</td><td>0.60 ± 0.10</td></tr><tr><td>C</td><td>0.40 ± 0.05</td></tr><tr><td>D</td><td>0.50 ± 0.05</td></tr><tr><td>E</td><td>0.25 ± 0.05</td></tr><tr><td>G</td><td>Typ 0.65</td></tr><tr><td>H</td><td>0.05 ± 0.05</td></tr></table>	DIM	MILLIMETERS	A	1.00 ± 0.10	B	0.60 ± 0.10	C	0.40 ± 0.05	D	0.50 ± 0.05	E	0.25 ± 0.05	G	Typ 0.65	H	0.05 ± 0.05	<table><tr><th>DIM</th><th>MILLIMETERS</th></tr><tr><td>A</td><td>1.00 ± 0.05</td></tr><tr><td>B</td><td>0.60 ± 0.05</td></tr><tr><td>C</td><td>0.50 ± 0.05</td></tr><tr><td>D</td><td>0.50 ± 0.03</td></tr><tr><td>E</td><td>0.25 ± 0.03</td></tr><tr><td>G</td><td>0.65 BSC</td></tr><tr><td>I</td><td>Max 0.03</td></tr></table>	DIM	MILLIMETERS	A	1.00 ± 0.05	B	0.60 ± 0.05	C	0.50 ± 0.05	D	0.50 ± 0.03	E	0.25 ± 0.03	G	0.65 BSC	I	Max 0.03	<table><tr><th>DIM</th><th>MILLIMETER</th></tr><tr><td>A</td><td>1.00 ± 0.05</td></tr><tr><td>B</td><td>0.60 ± 0.05</td></tr><tr><td>C</td><td>0.40 ± 0.05</td></tr><tr><td>D</td><td>0.50 ± 0.02 ~ 0.04</td></tr><tr><td>E</td><td>0.25 ± 0.025</td></tr><tr><td>G</td><td>0.65BSC</td></tr><tr><td>I</td><td>Max 0.03</td></tr></table>	DIM	MILLIMETER	A	1.00 ± 0.05	B	0.60 ± 0.05	C	0.40 ± 0.05	D	0.50 ± 0.02 ~ 0.04	E	0.25 ± 0.025	G	0.65BSC	I	Max 0.03
DIM	MILLIMETERS																																																																																									
A	1.0 ± 0.05																																																																																									
B	0.6 ± 0.05																																																																																									
C	0.4 ± 0.05																																																																																									
C1	0.38 ± 0.05																																																																																									
D	0.54 ± 0.03																																																																																									
E	0.25 ± 0.03																																																																																									
G	0.65 ± 0.03																																																																																									
H	0.05																																																																																									
I	Max 0.05																																																																																									
DIM	MILLIMETERS																																																																																									
A	1.0 ± 0.05																																																																																									
B	0.6 ± 0.05																																																																																									
C	0.4 ± 0.05																																																																																									
D	0.48 ± 0.05																																																																																									
E	0.23 ± 0.05																																																																																									
e	Min 0.125																																																																																									
G	0.65 ± 0.03																																																																																									
H	Typ 0.06																																																																																									
DIM	MILLIMETERS																																																																																									
A	1.00 ± 0.10																																																																																									
B	0.60 ± 0.10																																																																																									
C	0.40 ± 0.05																																																																																									
D	0.50 ± 0.05																																																																																									
E	0.25 ± 0.05																																																																																									
G	Typ 0.65																																																																																									
H	0.05 ± 0.05																																																																																									
DIM	MILLIMETERS																																																																																									
A	1.00 ± 0.05																																																																																									
B	0.60 ± 0.05																																																																																									
C	0.50 ± 0.05																																																																																									
D	0.50 ± 0.03																																																																																									
E	0.25 ± 0.03																																																																																									
G	0.65 BSC																																																																																									
I	Max 0.03																																																																																									
DIM	MILLIMETER																																																																																									
A	1.00 ± 0.05																																																																																									
B	0.60 ± 0.05																																																																																									
C	0.40 ± 0.05																																																																																									
D	0.50 ± 0.02 ~ 0.04																																																																																									
E	0.25 ± 0.025																																																																																									
G	0.65BSC																																																																																									
I	Max 0.03																																																																																									

ORDERING INFORMATION

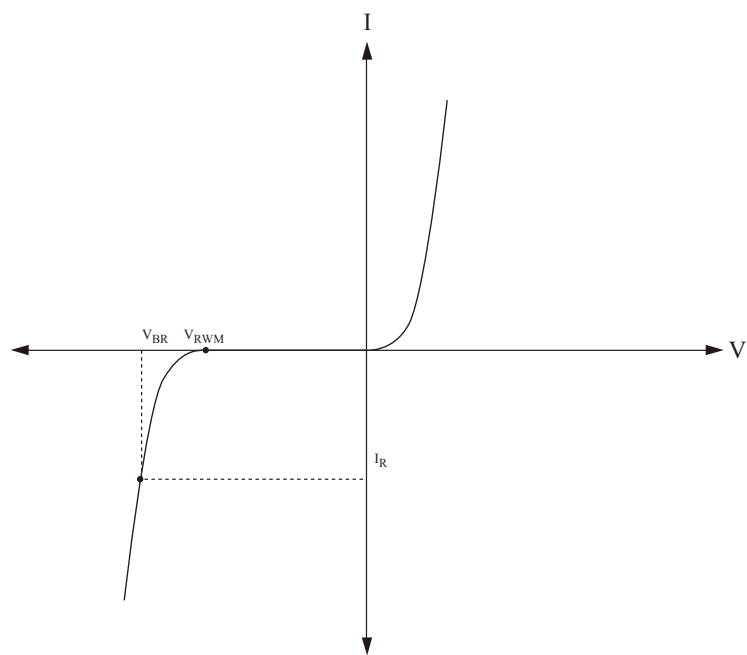
Part Number	Qty per Reel	Reel Size	Marking code
PG08GSUL2-RTL	10,000	7 inch	SH

PG08GSUL2

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P _{PK}	260	W
Peak Pulse Current (tp=8/20 μs)	I _{PP}	20	A
Junction Temperature	T _J	150	℃
Storage Temperature	T _{STG}	-55 ~ 150	℃

DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL

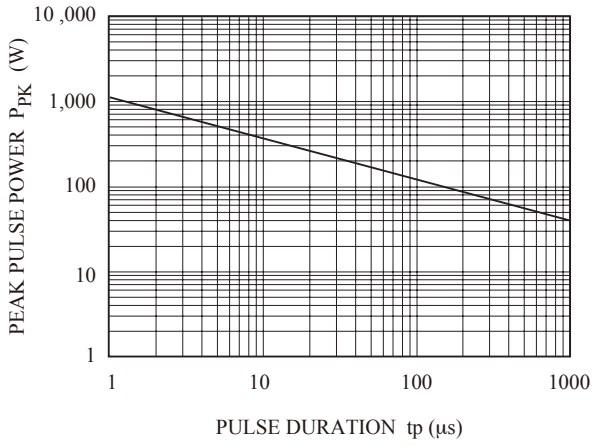


ELECTRICAL CHARACTERISTICS (Ta=25℃)

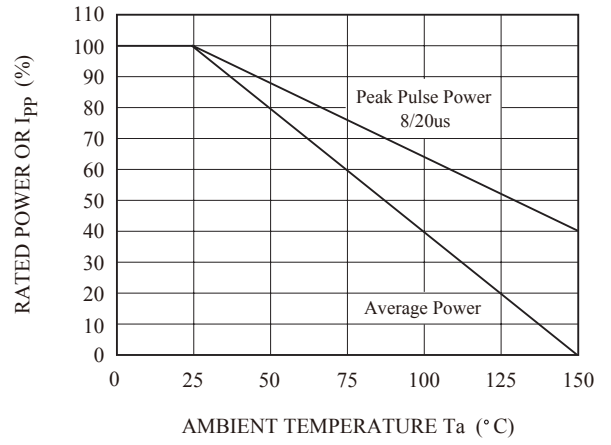
CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Reverse Stand-Off Voltage	V _{RWM}	-		-	-	7.6	V
Reverse Breakdown Voltage	V _{BR}	I _R =1mA		7.9	8.1	9.1	V
Reverse Leakage Current	I _R	V _{RWM} =7.6V		-	-	100	nA
Total Capacitance	C _T	V _R =0V, f=1MHz		-	160	200	pF
Clamping Voltage	V _C	I _{PP} =10A, tp=8/20 μs		-	10.2	11.5	V
		I _{PP} =20A, tp=8/20 μs		-	11.8	13	V
		I _{TLP} =4A, tp=100ns		-	9	-	V
		I _{TLP} =16A, tp=100ns		-	10	-	V
Dynamic Resistance	r _{dyn}	I _{TLP} =4A to 16A, tp=100ns		-	0.08	-	Ω
Electrostatic Discharge	V _{ESD}	IEC61000-4-2	Air	±30	-	-	kV
			Contact	±30			

PG08GSUL2

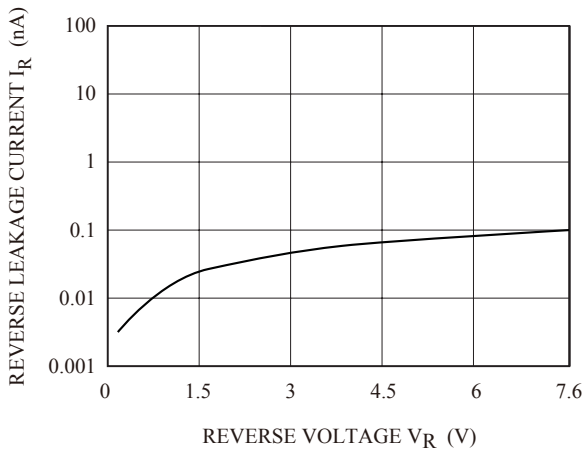
NON-REPETITIVE PEAK PULSE
POWER VS. PULSE TIME



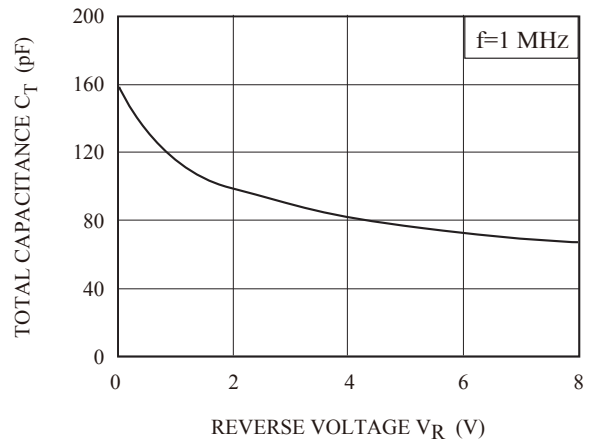
POWER DERATION CURVE



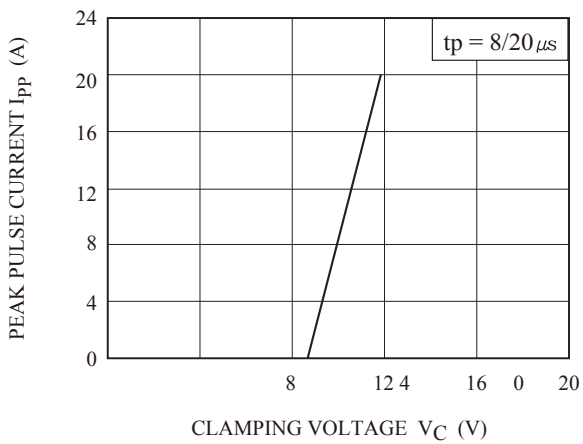
$I_R - V_R$



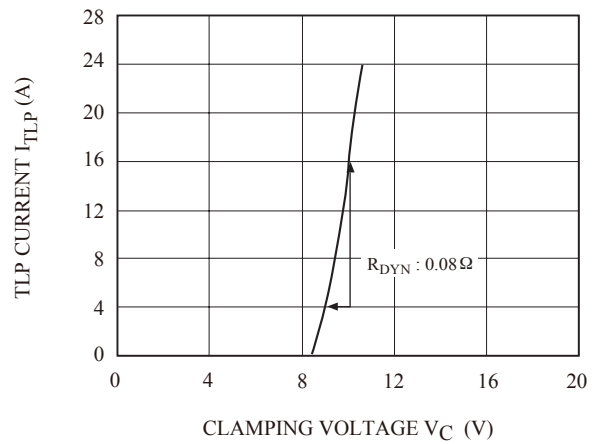
$C_T - V_R$

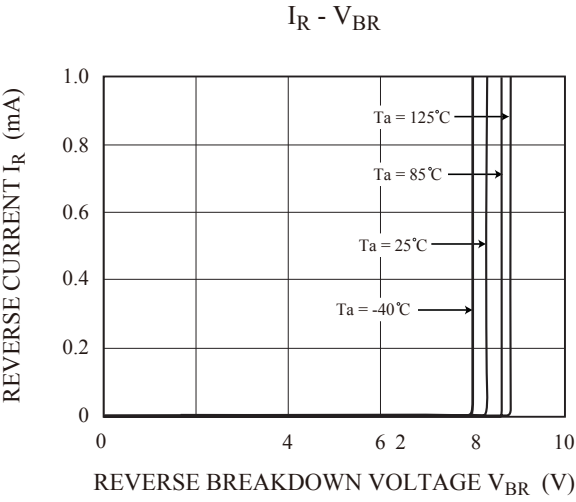


$I_{pp} - V_C$



$I_{TLP} - V_C$

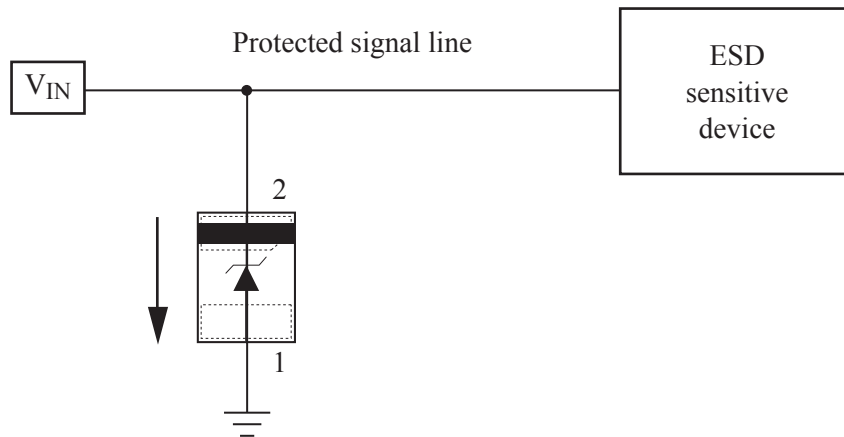




PG08GSUL2

APPLICATIONS

- TV.
- Mobile Phone
- Portable electronics.
- Power Line.



Recommended pad dimension & Marking Information

Recommended pad dimension	Marking Code
Unit : mm	