

Bi-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) : $7\text{A}(tp=8/20 \mu\text{s})$
- Bi-directional working voltage up to : $V_{RWM} = 24\text{V}$
- Small Size : $2.93 \times 1.3 \times 1.3\text{mm}$
- Suffix U : Qualified to AEC-Q101
ex) PG24EAS23-RTK/HU



SOT-23 (SMD-type)

PRODUCT DESCRIPTION

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

Package dimensions (SOT-23)	Pin configurations (Bi-directional)																																
<table border="1"> <thead> <tr> <th colspan="2">Unit : mm</th> </tr> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>2.93 ± 0.20</td></tr> <tr><td>B</td><td>1.30+0.20/-0.15</td></tr> <tr><td>C</td><td>1.0+0.3/-0.1</td></tr> <tr><td>D</td><td>0.40+0.15/-0.05</td></tr> <tr><td>E</td><td>2.40+0.30/-0.20</td></tr> <tr><td>G</td><td>1.90 ± 0.10</td></tr> <tr><td>H</td><td>0.95 ± 0.10</td></tr> <tr><td>J</td><td>0.13+0.10/-0.05</td></tr> <tr><td>K</td><td>0.00 ~ 0.10</td></tr> <tr><td>L</td><td>0.55 ± 0.10</td></tr> <tr><td>M</td><td>0.20 MIN</td></tr> <tr><td>N</td><td>1.00+0.20/-0.10</td></tr> </tbody> </table>	Unit : mm		DIM	MILLIMETERS	A	2.93 ± 0.20	B	1.30+0.20/-0.15	C	1.0+0.3/-0.1	D	0.40+0.15/-0.05	E	2.40+0.30/-0.20	G	1.90 ± 0.10	H	0.95 ± 0.10	J	0.13+0.10/-0.05	K	0.00 ~ 0.10	L	0.55 ± 0.10	M	0.20 MIN	N	1.00+0.20/-0.10	<table border="1"> <thead> <tr> <th>Pin</th> <th>Identification</th> </tr> </thead> <tbody> <tr> <td>1,2,3</td> <td>CATHODE</td> </tr> </tbody> </table>	Pin	Identification	1,2,3	CATHODE
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ORDERING INFORMATION

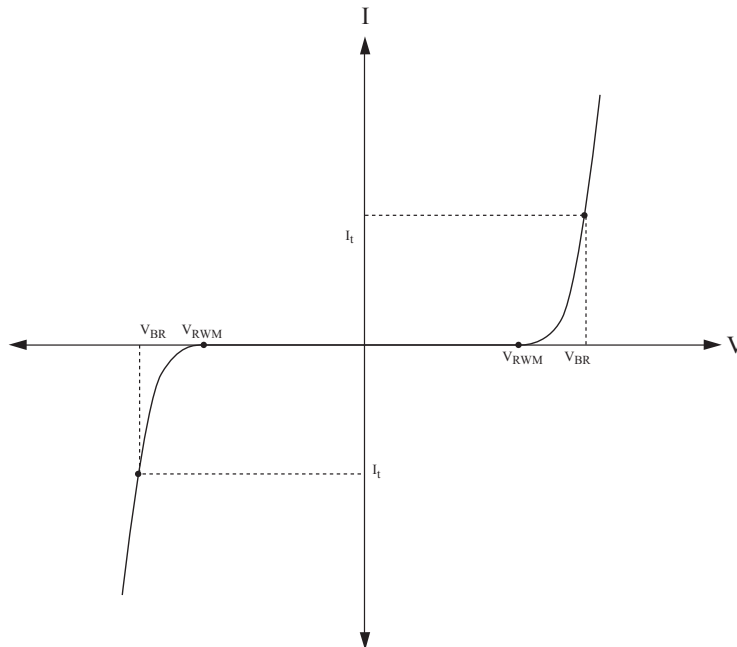
Part Number	Qty per Reel	Reel Size	Marking code
PG24EAS23-RTK/H	3,000	7 inch	QA

PG24EAS23

MAXIMUM RATING (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Pulse Power (tp=8/20 μs)	P _{PK}	330	W
Peak Pulse Current (tp=8/20 μs)	I _{PP}	7	A
Junction Temperature	T _J	150	°C
Operating Temperature	T _{opr}	-55 ~ 150	°C
Storage Temperature	T _{STG}	-55 ~ 150	°C

DEFINITIONS OF ELECTRICAL CHARACTERISTIC SYMBOL

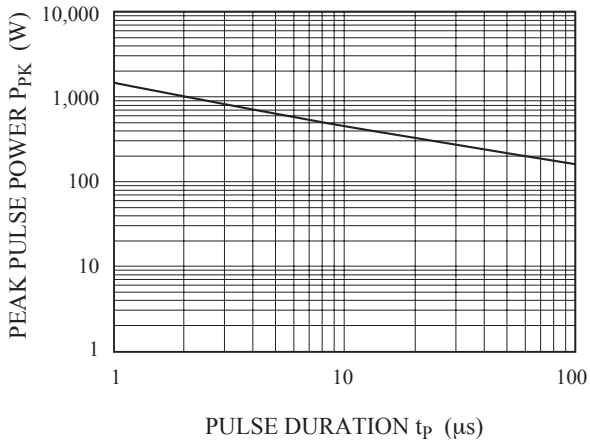


ELECTRICAL CHARACTERISTICS (Ta=25°C)

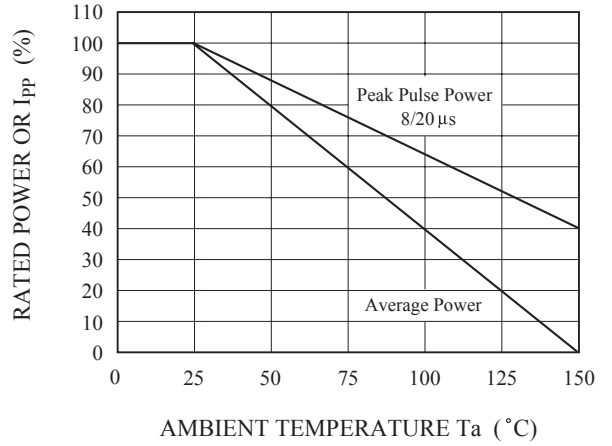
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Reverse Stand-Off Voltage	V _{RWM}	-	-	-	24	V	
Reverse Leakage Current	I _R	V _{RWM} =24V	-	-	100	nA	
Reverse Breakdown Voltage	V _{BR}	I _t =1mA	26	28	30	V	
Total Capacitance	C _T	V _R =0V, f=1MHz (Any I/O pin to ground)	-	-	30	pF	
Clamping Voltage	V _C	I _{PP} =1A, tp=8/20 μs (IEC61000-4-5)	-	-	34	V	
		I _{PP} =7A, tp=8/20 μs (IEC61000-4-5)	-	-	47		
Electrostatic Discharge	V _{ESD}	IEC61000-4-2	Air	±30	-	-	kV
			Contact	±30			

PG24EAS23

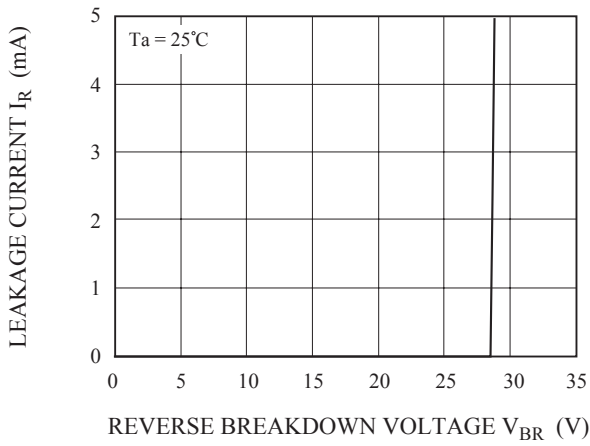
NON-REPETITIVE PEAK PULSE POWER VS. PULSE TIME



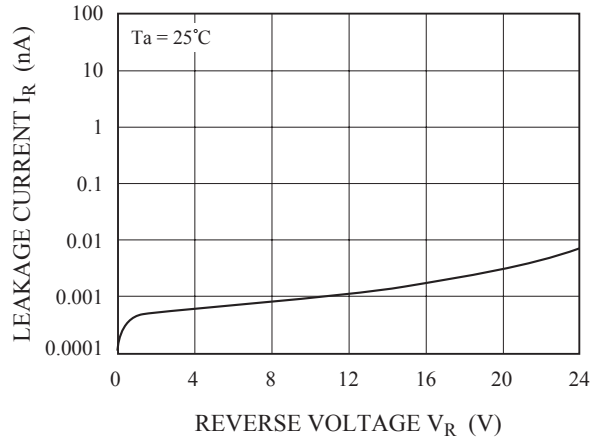
POWER DERATION CURVE



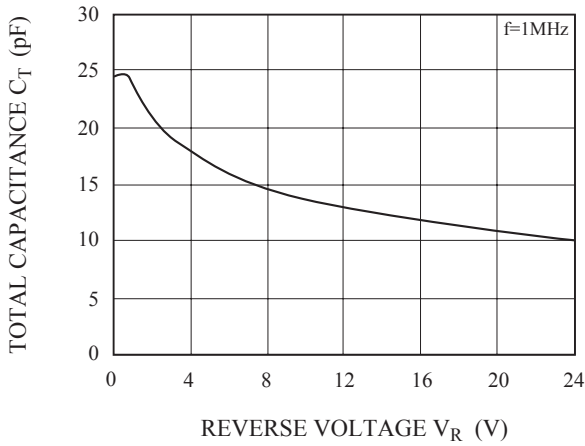
$I_R - V_{BR}$



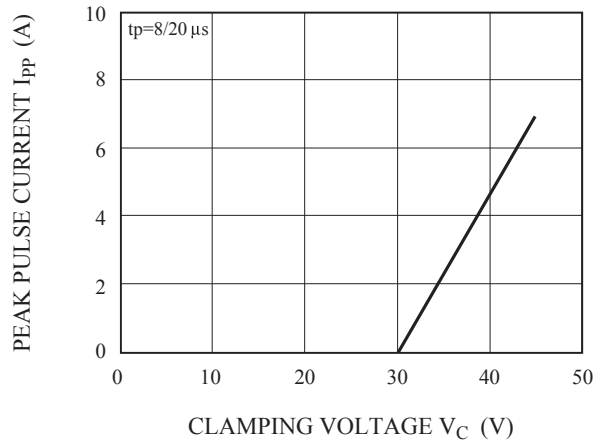
$I_R - V_R$



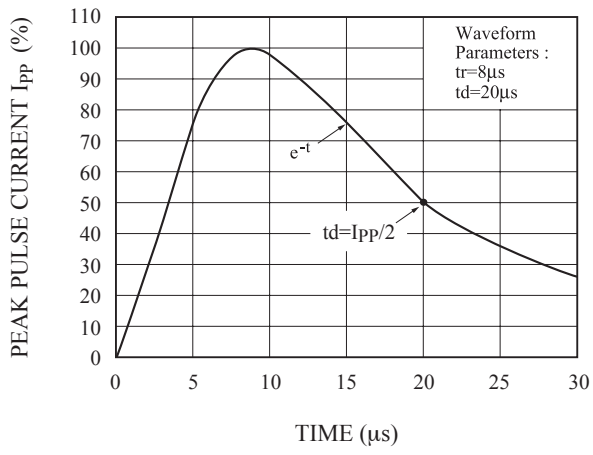
$C_T - V_R$



$I_{pp} - V_C$



PULSE WAVEFORM



APPLICATIONS

- Low and high speed CAN
- Automotive Application

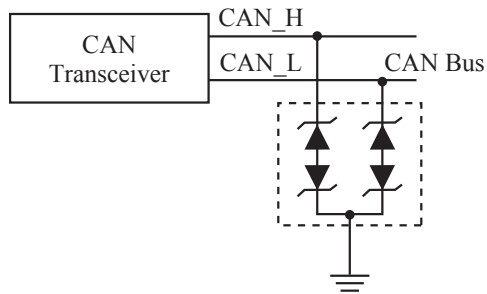


Figure 1. Low and high speed CAN TVS Protection Circuit

Recommended pad dimension & Marking Information

Recommended pad dimension	Marking Code
<p>Dimensions for the TVS diode pads: Diode pad width: 0.8 Diode pad height: 1.0 Distance from diode pad to first pad center: 2.4 Distance between pad centers: 0.95</p>	<p>Marking information: Type Name: QA Lot No. (indicated by a dashed box)</p>