

ACPDQC5V0R-HF

High-Reliability and High-Performance

RoHS Device

Halogen Free

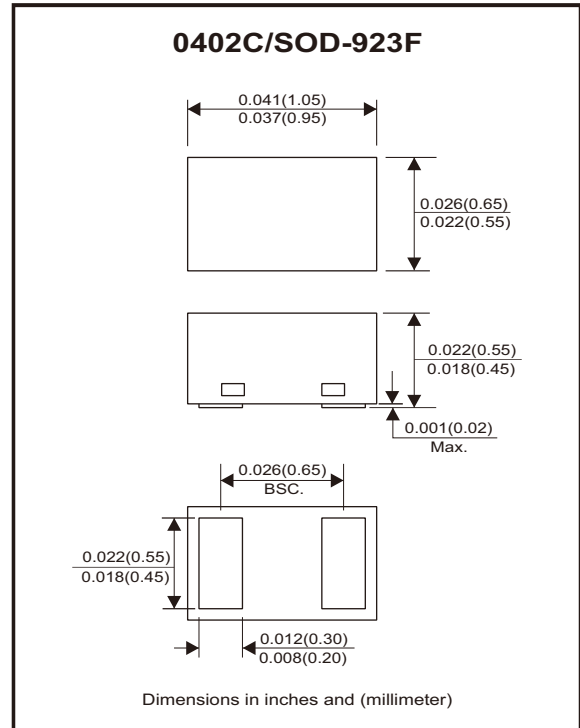


Features

- Bi-directional ESD protection.
- IEC 61000-4-2 (ESD) ; ± 30 KV(contact).
- Surface mount package.
- Operating voltage: 5V
- Low clamping voltage.
- Low leakage current.
- High surge current.
- AEC-Q101 Qualified.

Mechanical data

- Case: 0402C/SOD-923F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Mounting position: Any.
- Weight: 0.001 grams (approx.).



Circuit Diagram



Maximum Rating (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Peak pulse power	$T_P = 8/20\mu s$	P_{PP}	154	W
Peak pulse current	$T_P = 8/20\mu s$	I_{PP}	11	A
ESD capability	IEC 61000-4-2(air)	ESD	± 30	kV
	IEC 61000-4-2(contact)	ESD	± 30	
Operating temperature range		T_j	-40~+150	°C
Storage temperature range		T_{STG}	-40~+150	°C

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Working peak reverse voltage		V_{RWM}			5	V
Diode breakdown voltage	$I_T = 1mA$	V_{BR}	5.6		9.4	V
Reverse leakage current	$V_{RWM} = 5V$	I_R		5	90	nA
Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$	V_c		7.5	10	V
	$I_{PP} = 11A, t_p = 8/20\mu s$	V_c		12	14	V
Junction capacitance	$V_R = 0V, f = 1MHz$	C_J		20	30	pF

Typical Rating and Characteristic Curves (ACPDQC5V0R-HF)

Fig.1 - 8/20 μ s Peak Pulse Current Waveform Acc. IEC 61000-4-5

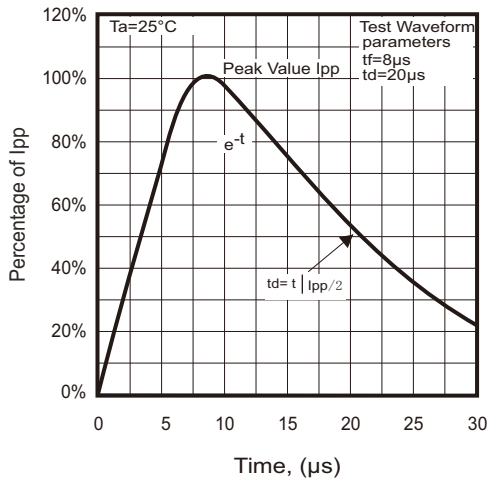


Fig. 2 - Capacitance Between Terminals Characteristics

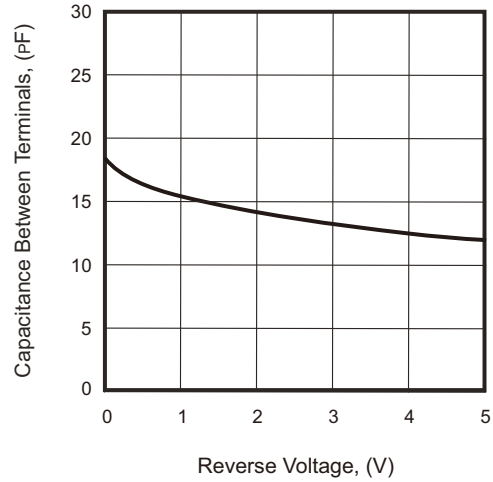


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

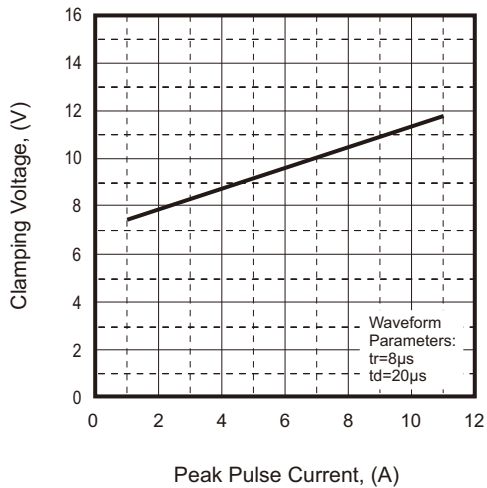
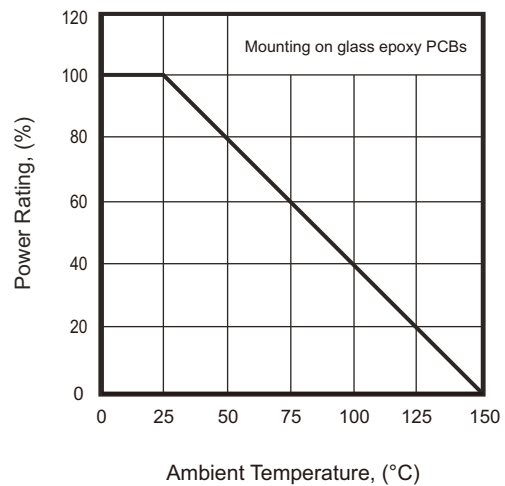
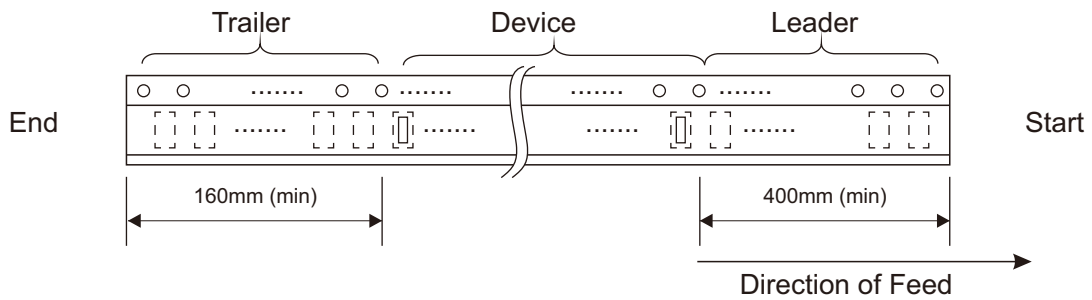
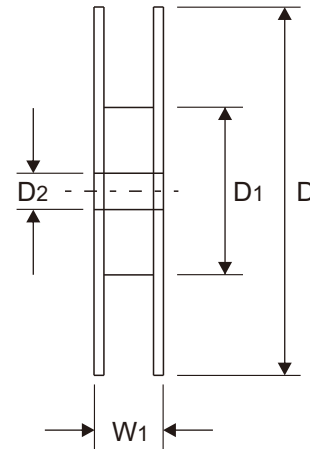
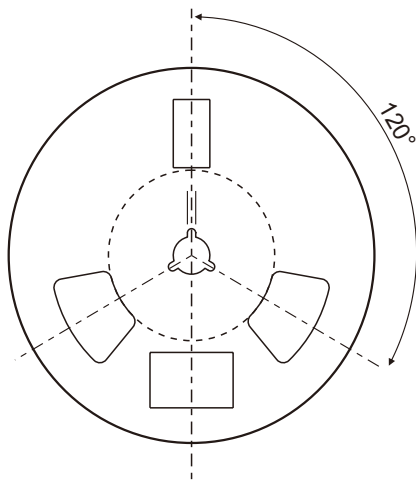
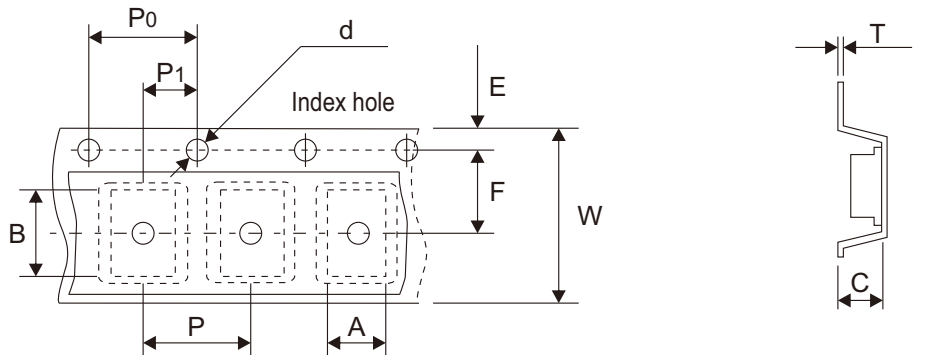


Fig. 4 - Power Rating Derating Curve



Reel Taping Specification



0402C (SOD-923F)	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	0.78 ± 0.05	1.25 ± 0.05	0.65 ± 0.05	1.50 + 0.10 - 0.00	178.00 ± 1.00	60.00 ± 0.50	13.50 ± 0.20
	(inch)	0.031 ± 0.002	0.049 ± 0.002	0.026 ± 0.002	0.059 + 0.004 - 0.000	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.008

0402C (SOD-923F)	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.20 + 0.03 - 0.05	8.00 ± 0.20	12.00 + 0.50 - 0.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.008 + 0.001 - 0.002	0.315 ± 0.008	0.472 + 0.020 - 0.000

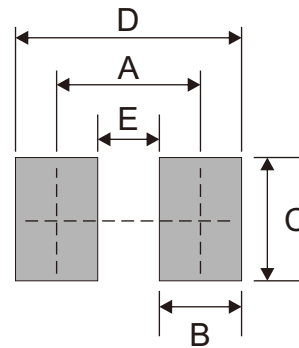
Marking Code

Part Number	Marking Code
ACPDQC5V0R-HF	E5R



Suggested P.C.B. PAD Layout

SIZE	0402C/SOD-923F	
	(mm)	(inch)
A	0.70	0.028
B	0.40	0.016
C	0.60	0.024
D	1.10	0.043
E	0.30	0.012



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
0402C/SOD-923F	5,000	7