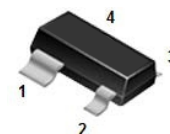


CPDT4-5V0MUSBP-HF

RoHS Device
Halogen Free



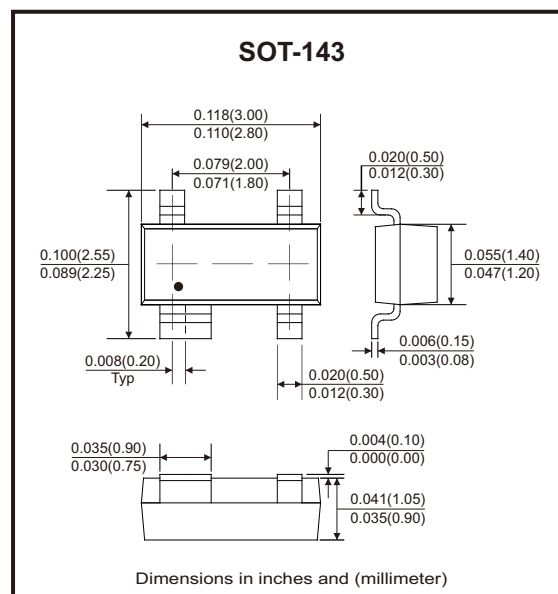
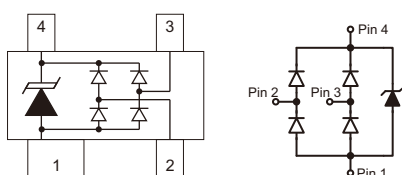
Features

- Protects two I/O lines.
- Ultra low capacitance for high-speed interfaces.
- Fast turn-on and low clamping voltage.
- IEC 61000-4-2 (ESD) $\pm 20\text{kV}$ (air/contact)
IEC 61000-4-5 (Lightning) 5A (8/20 μs)

Mechanical data

- Case: SOT-143, molded plastic.
- Mounting position: Any.

Circuit Diagram



Maximum Rating (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Peak pulse power	$T_P = 8/20\mu\text{s}$	P_{PP}	100	W
Peak pulse current	$T_P = 8/20\mu\text{s}$	I_{PP}	5	A
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD	± 20	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 (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse stand-off voltage		V_{RWM}			5	V
Reverse breakdown voltage	$I_T = 1\text{mA}$, Any I/O Pin to GND	V_{BR}	6			V
Reverse leakage current	$V_{RWM} = 5\text{V}$, I/O Pin to GND	I_R			500	nA
Clamping voltage	$I_{PP} = 5\text{A}$, $T_P = 8/20\mu\text{s}$, I/O Pin to GND	V_C		14	20	V
Clamping voltage	$TLP = 16\text{A}$, $T_P = 100\text{ns}$	V_C		9		V
Junction capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$, I/O Pin to GND	C_J		0.8	1.0	pF
	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between I/O Pins	C_J		0.4	0.6	

Typical Rating and Characteristic Curves (CPDT4-5V0MUSBP-HF)

Fig.1 - Peak Pulse Power vs. Pulse Time

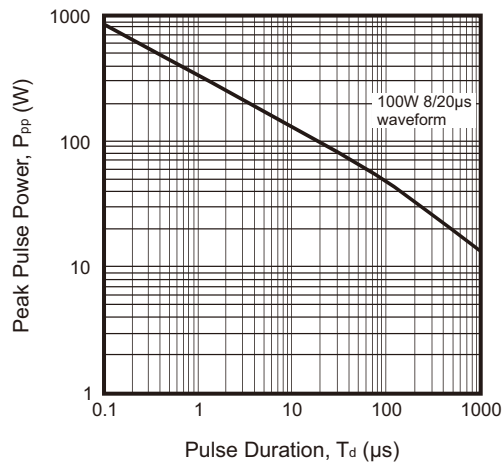


Fig.2 - Power Derating Curve

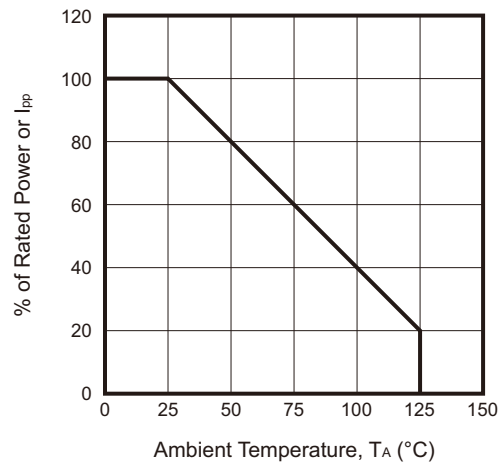


Fig.3 - Clamping Voltage vs. Peak Pulse Current

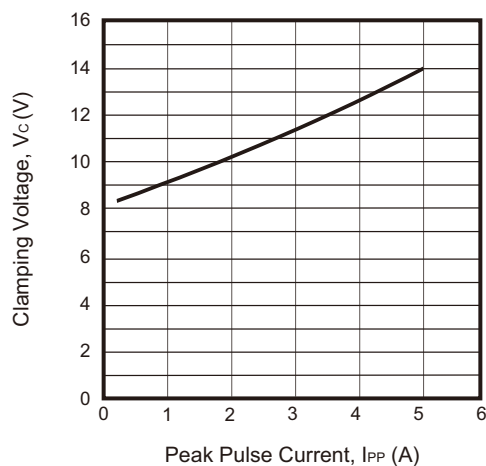


Fig.4 - Typical Capacitance Between Terminals Characteristics

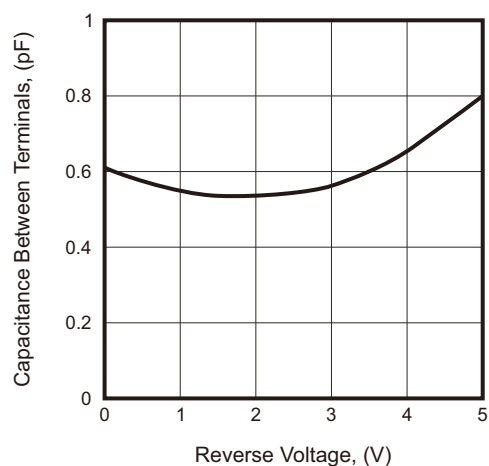


Fig.5 - 8/20 μs Peak Pulse Current Waveform Acc. IEC 61000-4-5

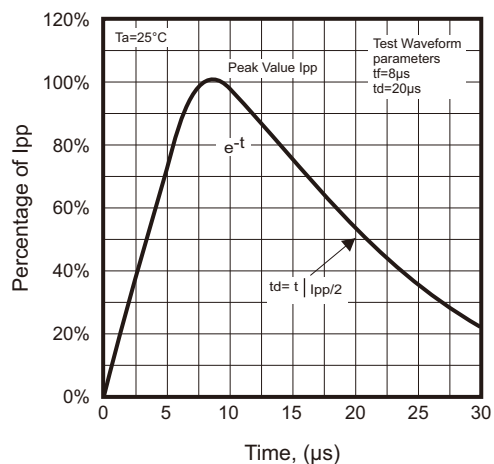
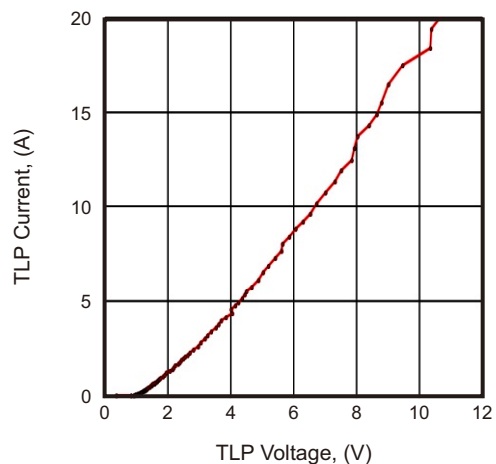
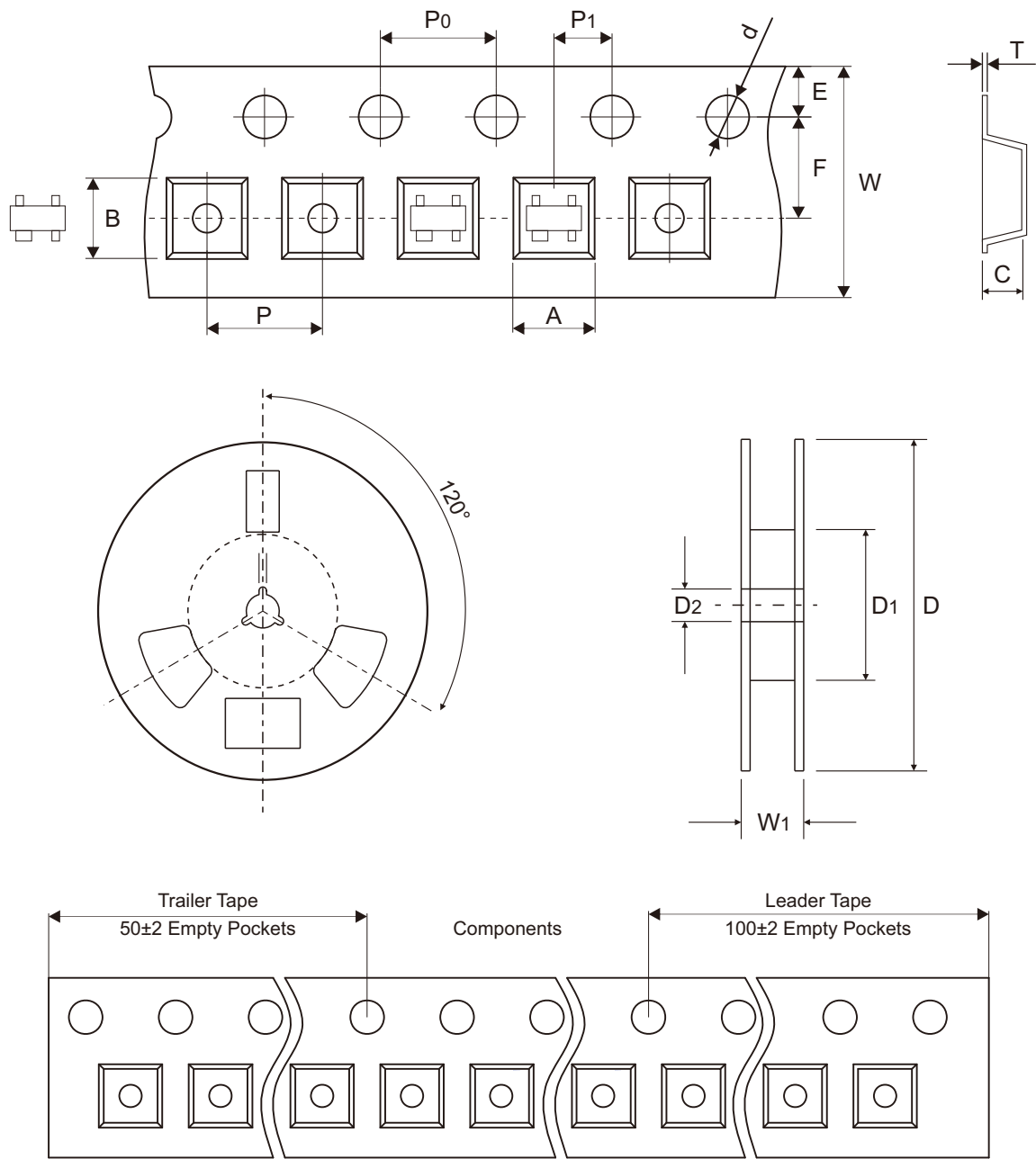


Fig.6 - TLP- Positive Pulse



Reel Taping Specification

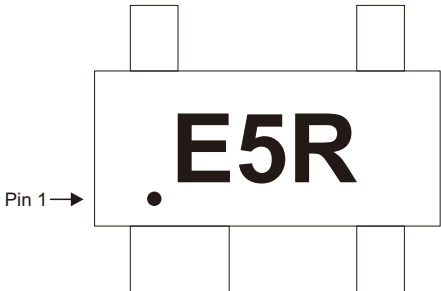


SOT-143	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.17 ± 0.12	$2.80 + 0.10 - 0.15$	$1.30 + 0.11 - 0.20$	$1.50 + 0.15 - 0.10$	178.00 ± 1.00	54.00 ± 2.00	$13.00 + 0.50 - 0.20$
	(inch)	0.125 ± 0.005	$0.110 + 0.004 - 0.006$	$0.051 + 0.004 - 0.008$	$0.059 + 0.006 - 0.004$	7.008 ± 0.039	2.126 ± 0.079	$0.512 + 0.020 - 0.008$

SOT-143	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	$0.23 + 0.037 - 0.05$	$8.00 + 0.30 - 0.10$	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	$0.009 + 0.001 - 0.002$	$0.315 + 0.012 - 0.004$	0.484 ± 0.039

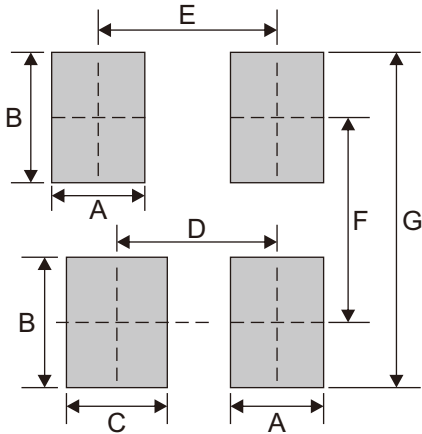
Marking Code

Part Number	Marking Code
CPDT4-5V0MUSBP-HF	E5R



Suggested P.C.B. PAD Layout

SIZE	SOT-143	
	(mm)	(inch)
A	1.00	0.039
B	1.40	0.055
C	1.20	0.047
D	1.72	0.068
E	1.92	0.076
F	2.20	0.087
G	3.60	0.142



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-143	3,000	7