

CSRS045V0P-HF RoHs Device



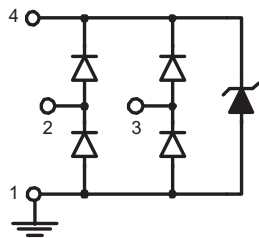
Features

- Halogen free.
- ESD Protected for 2 high speed I/O ports
- IEC61000-4-2 (ESD) $\pm 8\text{kV}$ (Contact), $\pm 15\text{kV}$ (Air).
- IEC61000-4-4 (FET)(5/50ns) Level-3, 20A for I/O
- 40A for Power.
- IEC61000-4-5 (Lightning) 6A(8/20 μs)
- Working voltage: 5V
- Low capacitance: 1.2pF(Typ.).
- Fast turn-on and Low clamping voltage.

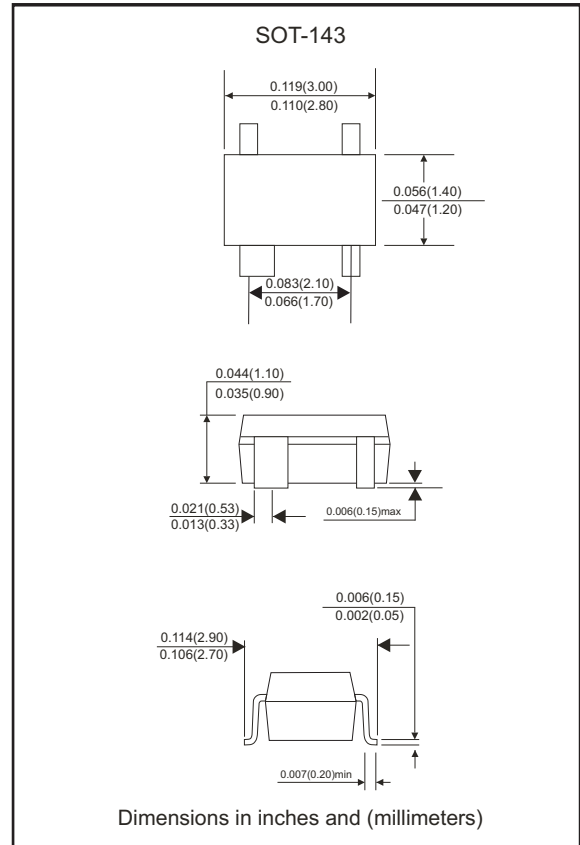
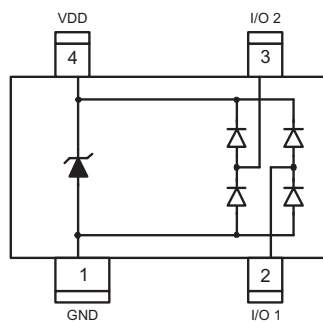
Mechanical data

- Case: SOT-143 standard package, molded plastic.
- Terminals: Solder plated, solderable per MIL-STD-750, method 2026.
- Weight: 0.0108 gram(approx.).

Circuit Diagram



Pin Configuration



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

Parameter	Symbol	Value	Unit
Peak pulse current (tp = 8/20 us)	I _{PP}	6	A
Operating supply voltage	V _{DC}	6	V
ESD per IEC 61000-4-2(Air)	ESD	17	kV
ESD per IEC 61000-4-2(Contact)		12	
ESD per IEC 61000-4-2(Air)(VDD-GND)	ESD_VDD	30	kV
ESD per IEC 61000-4-2(Contact)(VDD-GND)			
Lead soldering temperature	T _{SOL}	260 (10 sec)	°C
Operating temperature	T _J	-55 to +85	°C
Storage temperature	T _{STG}	-55 to +150	°C
DC voltage at any I/O pin	V _{IO}	(GND -0.5) to (VDD +0.5)	V

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse stand-Off voltage	Pin 4 to Pin 1	V _{RWM}			5	V
Reverse leakage current	V _{RWM} = 5 V, Pin 4 to Pin 1	I _R			2	uA
	V _{PIN 4} = 5 V, V _{PIN 1} = 0V				1	
Diode breakdown voltage	I _R = 1 mA, Pin 4 to Pin 1	V _{BD}	6.2			V
Forward voltage	I _F = 15 mA, Pin 4 to Pin 1	V _F		0.8	1	V
Clamping voltage	I _{PP} = 5 A, tp=8/20us, Any Channel Pin to Ground	V _C		8.1	9	V
	IEC 61000-4-2 +6kV,Contact mode Any channel pin to ground			13		
Junction capacitance	V _{pin4} = 5V,V _{pin1} = 0V, V _{IN} =2.5V, f = 1MHz,Any channel pin to ground	C _J		1.2	1.4	pF
	V _{pin4} = 5V,V _{pin1} = 0V, V _{IN} =2.5V f = 1MHz,Between channel pin			0.1	0.12	
	V _{pin4} = 5V,V _{pin1} = 0V, V _{IN} =2.5V f = 1MHz,Channel_x pin to ground - channel_y pin to ground			0.04	0.06	

RATING AND CHARACTERISTIC CURVES (CSRS045V0P-HF)

Fig. 1 - Power derating curve

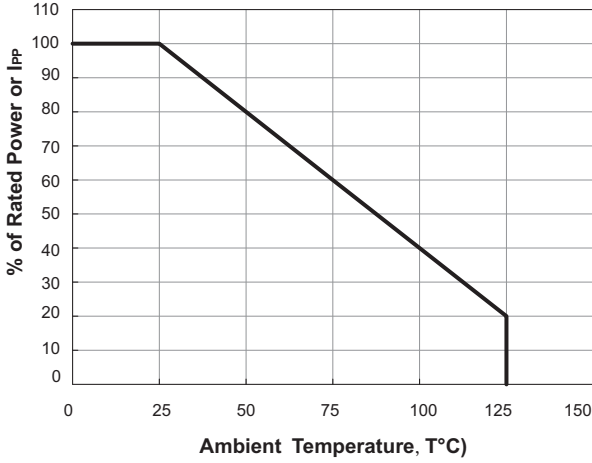


Fig. 2 - Clamping voltage vs. Peak pulse current

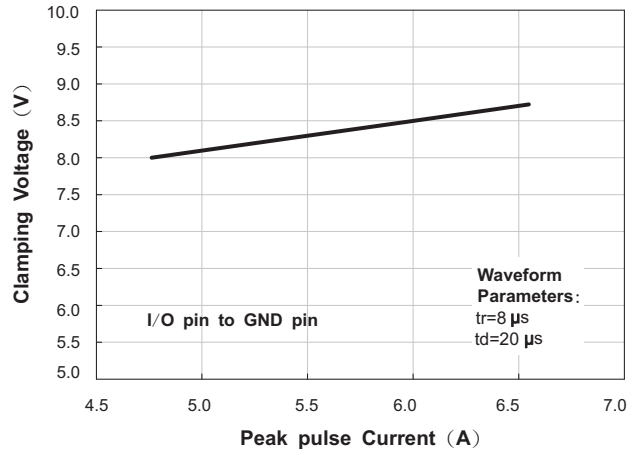


Fig.3 - Forward voltage v.s. forward current

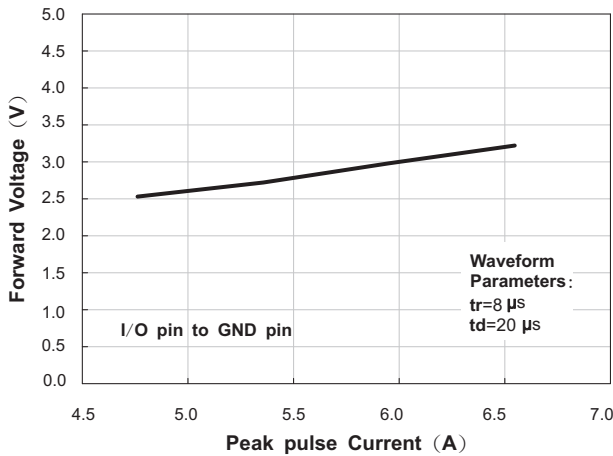


Fig.4 - Typical variation of C_{IN} v.s. V_{IN}

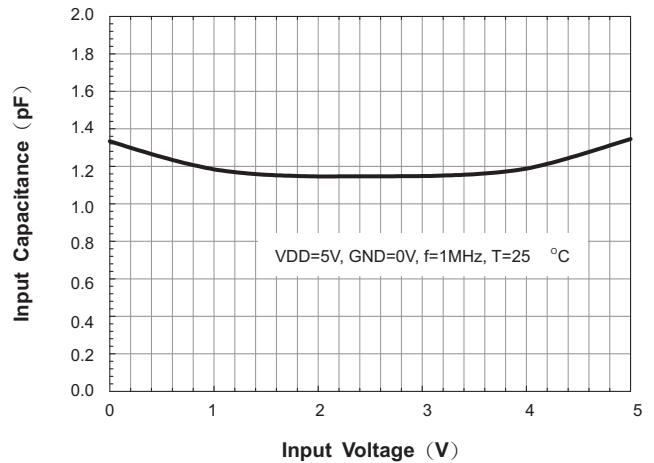


Fig. 5 - Typical variation of C_{IN} v.s. temperature

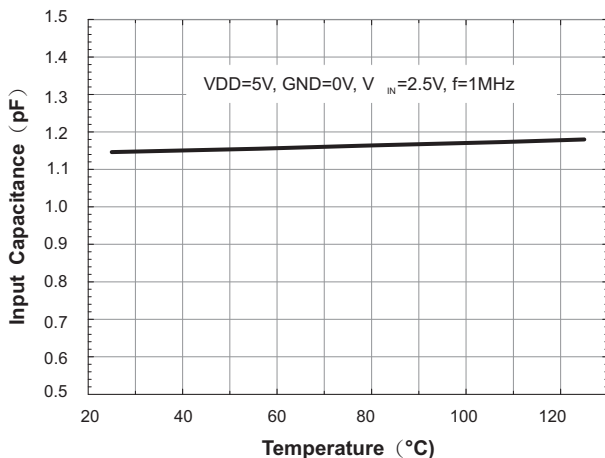
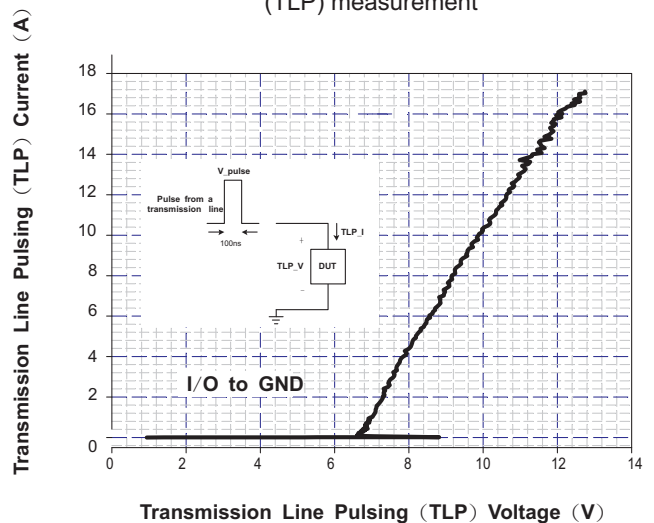
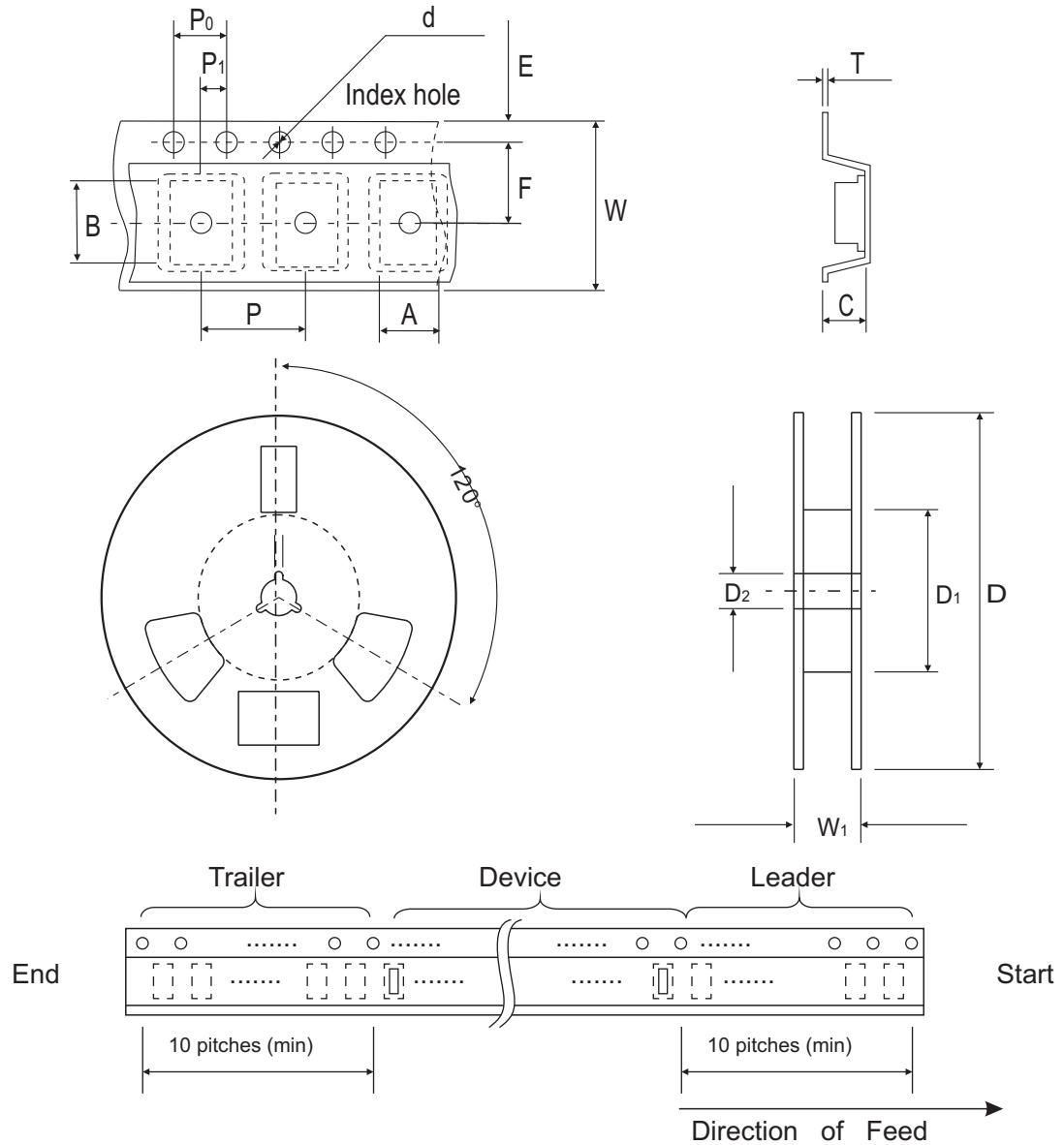


Fig. 6 - Transmission line pulsing (TLP) measurement



Reel Taping Specification

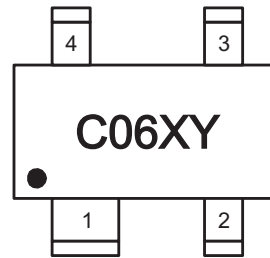


SOT-143	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(mm)	3.19 ± 0.10	2.80 ± 0.10	1.31 ± 0.10	1.55 ± 0.10	178 ± 1	50.0 MIN.	13.0 ± 0.20
	(inch)	0.126 ± 0.004	0.110 ± 0.004	0.052 ± 0.004	0.061 ± 0.004	7.008 ± 0.040	1.969 MIN.	0.512 ± 0.008

SOT-143	SYMBOL	E	F	P	P ₀	P ₁	W	W ₁
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	8.00 ± 0.30	14.4 MAX.
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.315 ± 0.012	0.567 MAX.

Marking Code

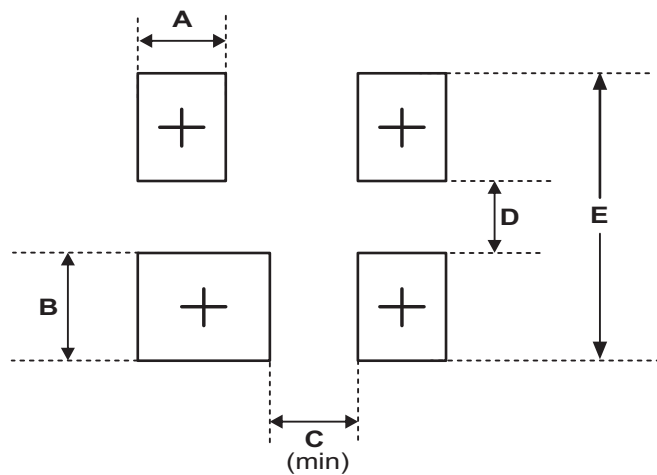
Part Number	Marking Code
CSRS045V0P-HF	C06XY



C06 = Device code
 X = Date Code
 Y = Control Code

Suggested PAD Layout

SIZE	SOT-143	
	(mm)	(inch)
A	0.70	0.028
B	1.40	0.055
C	2.41	0.095
D	0.80	0.031
E	3.60	0.142



Standard Package

Case Type	Qty per Reel	Reel Size
	(Pcs)	(inch)
SOT-143	3000	7