Description

The CSH712E2B is designed for asymmetrical (12V to -7V) protection in multi-point data transmission standard RS-485 applications. The CSH712E2B can be used to protect devices from transient voltages resulting from electrostatic discharge (ESD), electrical fast transients (EFT), and lightning induced surges.

Features

- IEC 61000-4-2 (ESD)
  - 30kV Contact Discharge
  - 30kV Air Discharge
- IEC 61000-4-5 (Lightning)
  - 17A (8/20 s)
- IEC 61000-4-4 EFT Protection
  - 40A (5/50ns)
- Halogen free and RoHS compliant
- Protects two +12V to -7V lines
- Low clamping voltage
- Low capacitance
- Low leakage current

Mechanical Characteristics

- SOT-23
- ROHS/ Compliant
- Halogen free
- Molding compound flammability rating UL 94V-0
- Marking Part number
- Packing: Tape and Reel per EIA 481

Applications

- Protection of RS-485 transceivers with extended common-mode range
- Security systems
- Automatic Teller Machines
- FC systems
- Networks

Dimensions and Pin Configuration

Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to IO		
2	IO2	Connect to IO		
3	GND	Connect to GND		

Ordering Information

Part Number	Package	Marking	Packing	Reel Size
CSH712E2B	SOT-23	712	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A

Parameters	Symbol	Min.	Max.	Unit
	P_{pk}	-	350	W
[redacted]	I_{PP}		17	A
ESD (IEC61000-4-	V_{ESD}	-	30	kV

Electrical Characteristics (T_A

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}	Pin1 or Pin2 to Pin3			12	V
Reverse Stand-off Voltage	V_{RWM}	Pin3 to Pin1 or Pin2			7	V
Reverse Breakdown Voltage	V_{BR}	Pin1 or Pin2 to Pin3;I_R=1mA	13.3			V
Reverse Breakdown Voltage	V_{BR}	Pin3 to Pin1 or Pin2;I_R=1mA	7.5			V
Reverse Leakage Current	I_R	Pin1 or Pin2 to Pin3;V_{RWM}=12V				

Typical Performance Characteristics (T_A

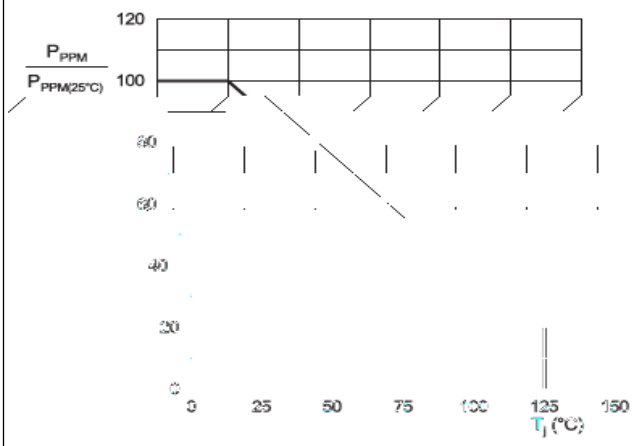

Figure1. Peak pulse power derating curve

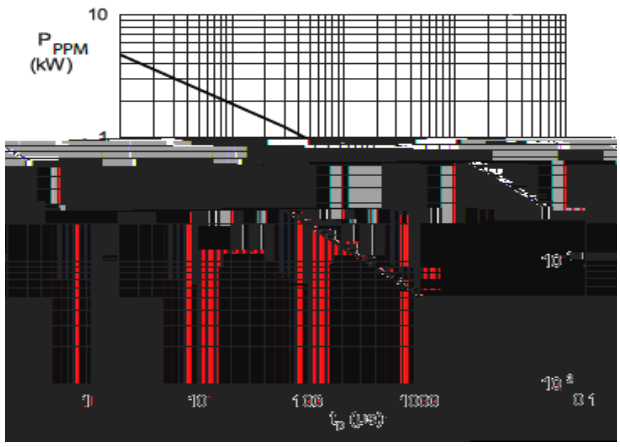

Figure2. Peak Pulse Power vs. Pulse Time

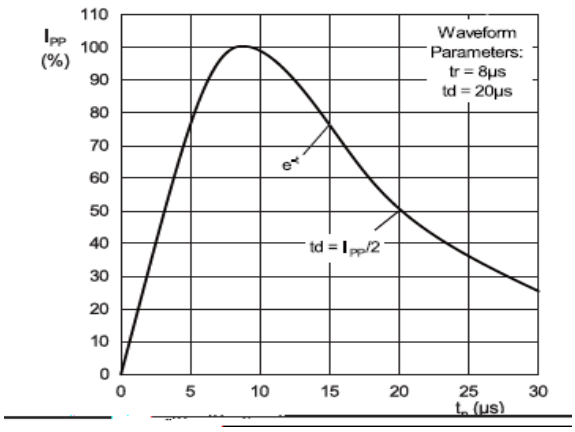

Figure3. Pulse Waveform

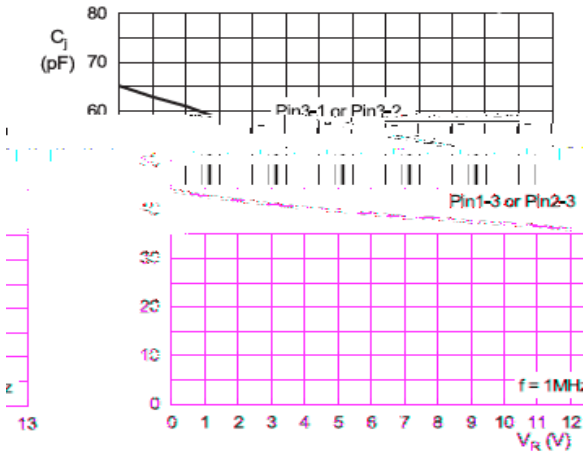

Figure 4 Capacitance vs reverse voltage

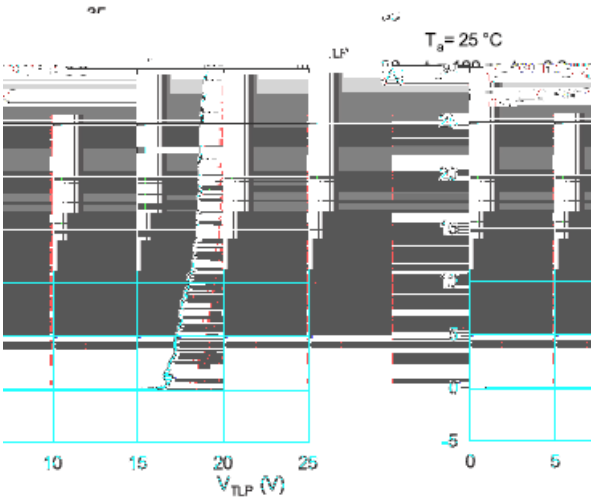

Figure 5 TLP I-V Curve (Pin 1 or 2 to Pin 3)

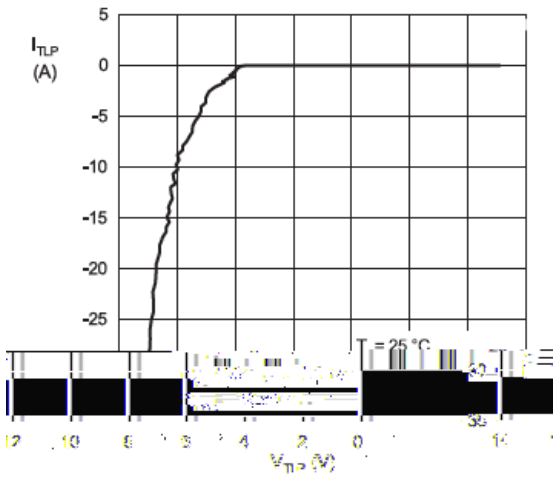

Figure 6 TLP I-V Curve (Pin 3 to Pin 1 or 2)

Applications Information

Typical RS485 Interface Application

Package Outline Drawing

Units in millimeters

Recommended Land Pattern

Note:

1. Controlling dimension: in millimeters