

Features

- Ultra low leakage: nA level
- Operating voltage: 12V
- Ultra low capacitance: 0.8 pF (typ)
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 13A (8/20 μs)
- RoHS Compliant

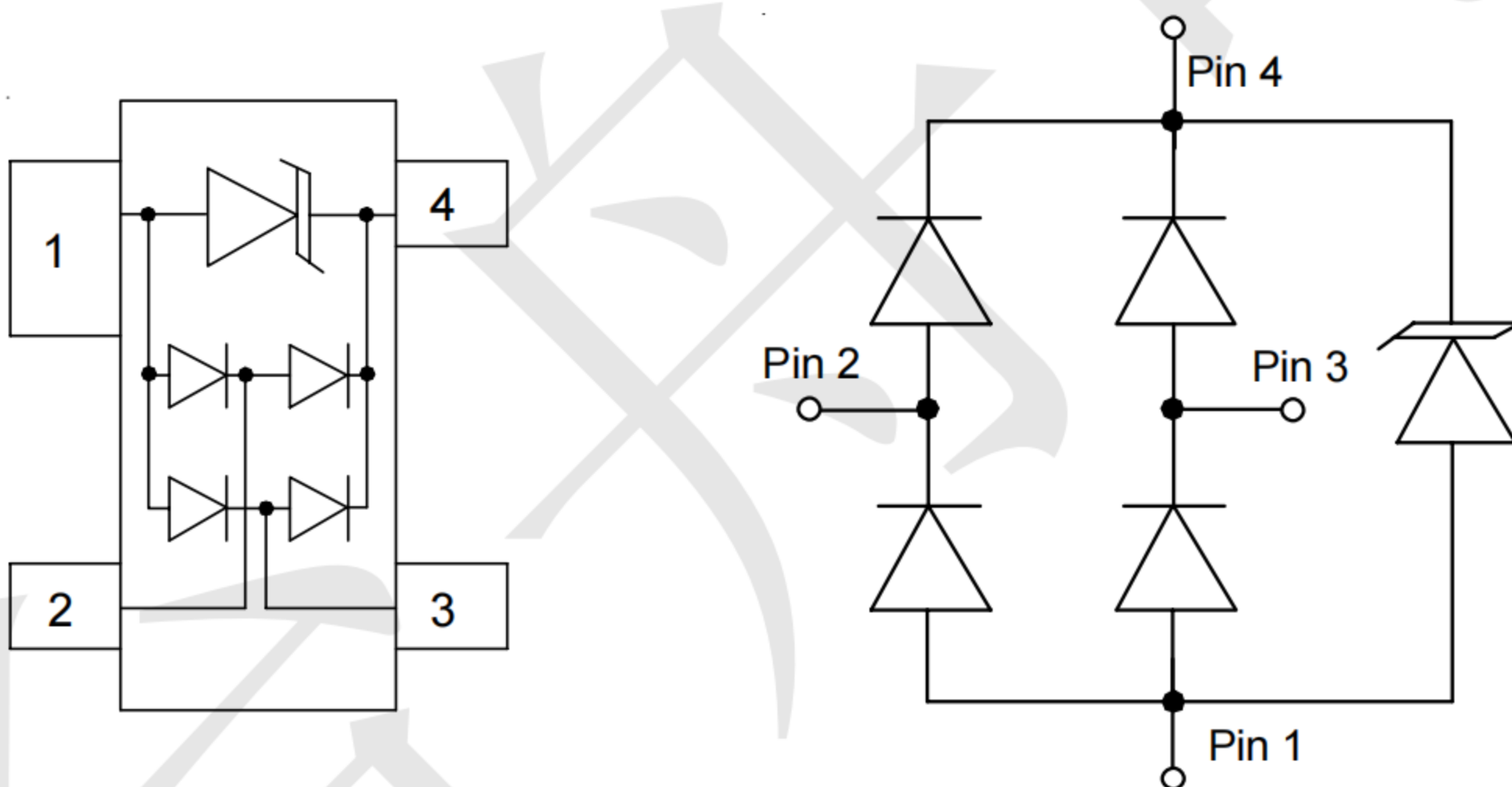
Mechanical Characteristics

- Package: SOT-143
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J STD 020
- Shipping Qty : 3000pcs/7Inch Tape & Reel

Applications

- Ethernet - 10/100 Base T
- Cellular Phones
- Audio & Video Inputs
- FireWire, SCSI & USB Interfaces

Dimensions and Pin Configuration



Marking: R12 Or 12A

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|--------|-------------|------|
| Peak Pulse Power (8/20µs) | Ppk | 400 | W |
| Peak Pulse Current (8/20µs) | Ipp | 13 | A |
| ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | VESD | ±30 ±30 | kV |
| Operating Temperature Range | TJ | -55 to +125 | °C |
| Storage Temperature Range | Tstg | -55 to +150 | °C |

Electrical Characteristics (TA=25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------|--------|------|-----|-----|------|--|
| Reverse Working Voltage | VRWM | | | 12 | V | |
| Breakdown Voltage | VBR | 13.8 | | | V | IT = 1mA |
| Reverse Leakage Current | IR | | | 0.2 | uA | VRWM = 12V |
| Clamping Voltage | VC | | | 25 | V | I _{PP} = 5A (8 x 20µs pulse) |
| Clamping Voltage | VC | | | 28 | V | I _{PP} = 13A (8 x 20µs pulse) |
| Junction Capacitance | CJ | | 0.8 | 1.0 | pF | VR = 0V, f = 1MHz (IO to GND) |

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig1. 8/20 μs Pulse Waveform

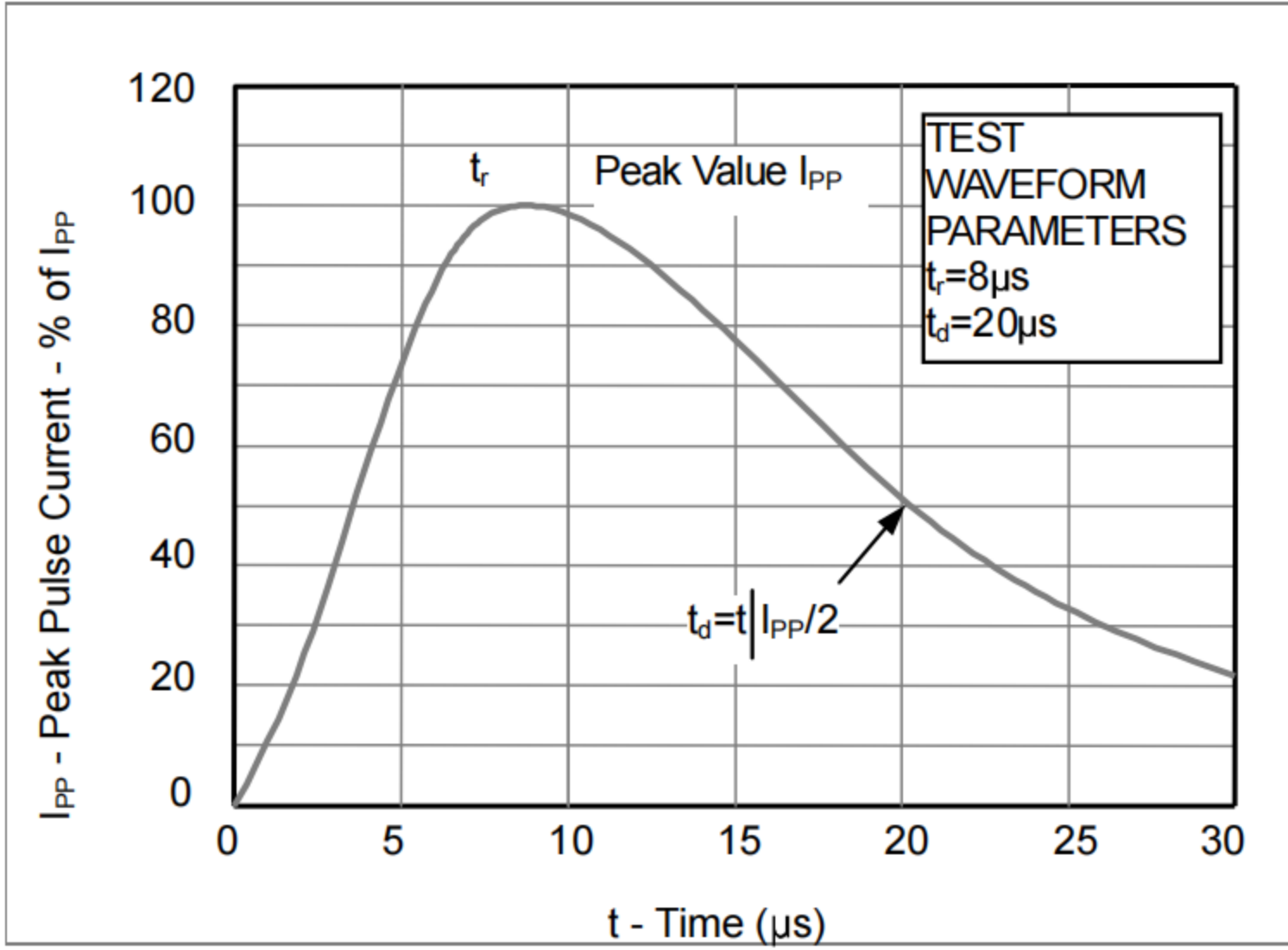


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

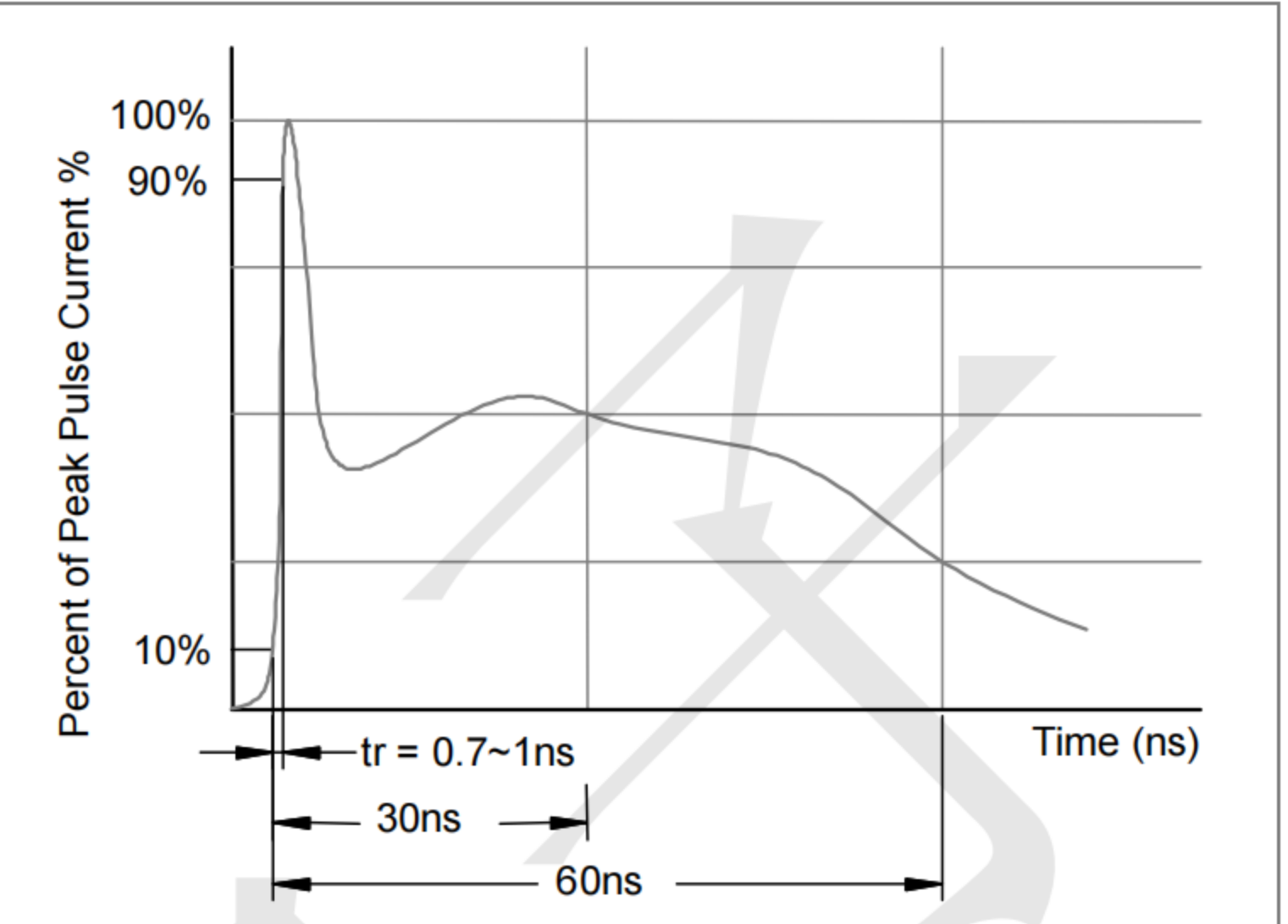
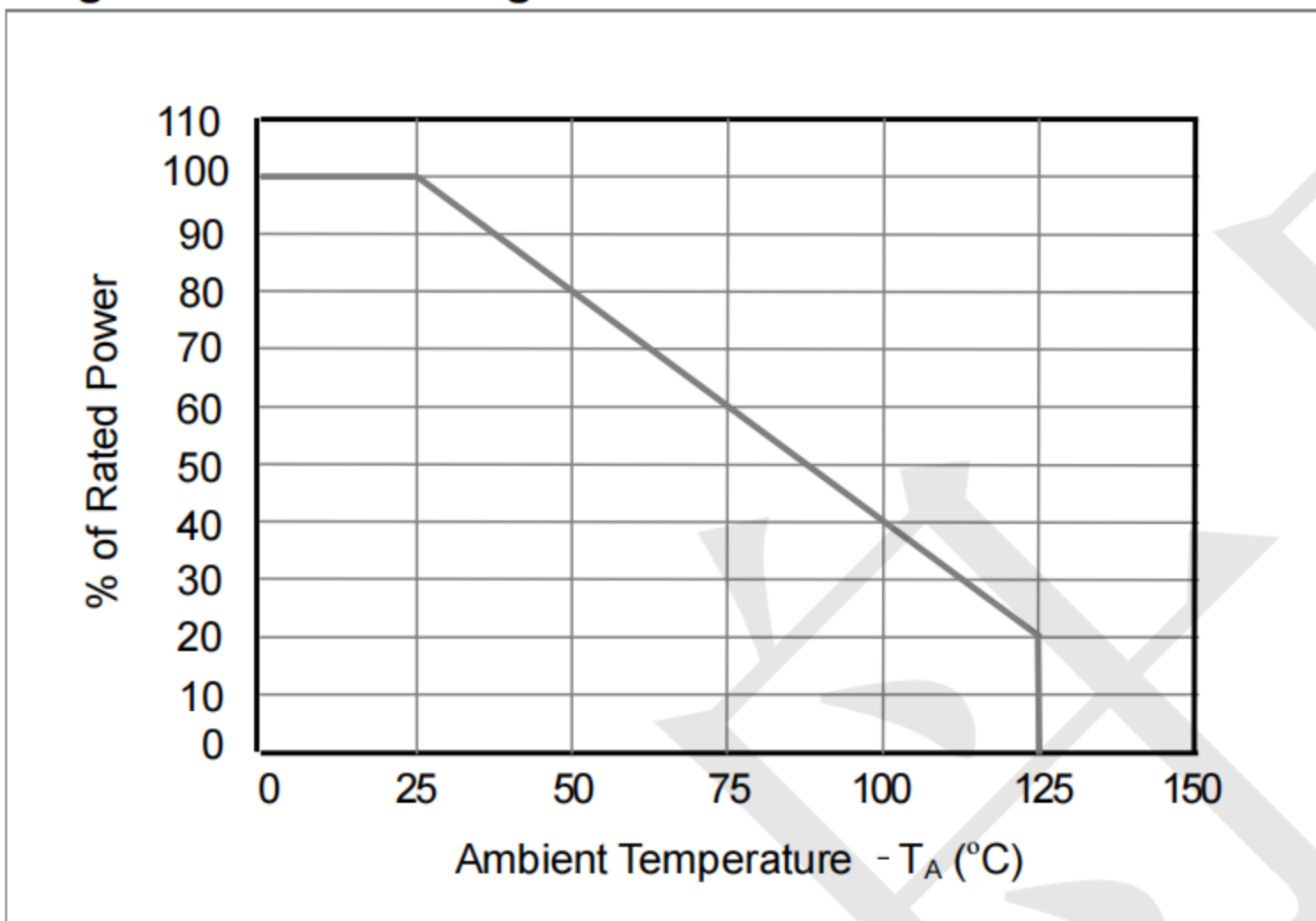
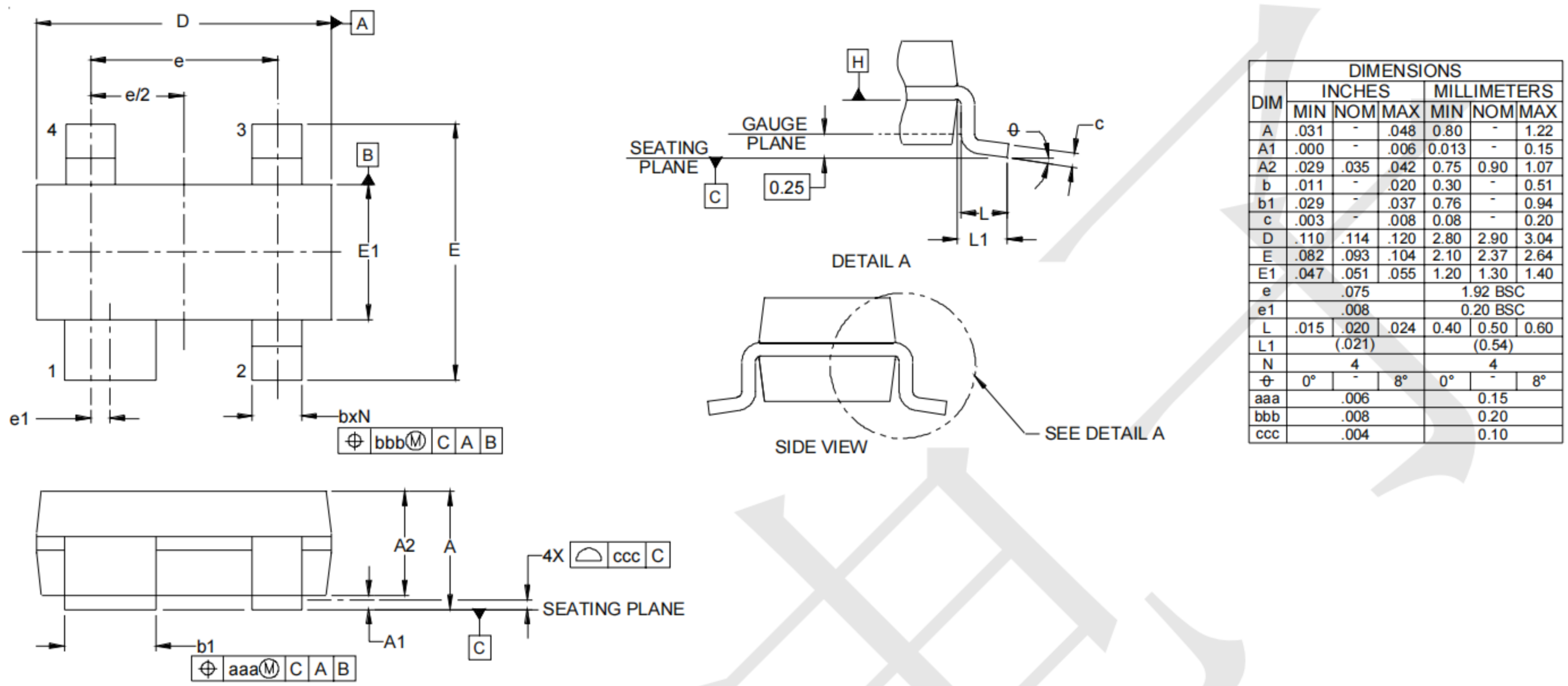


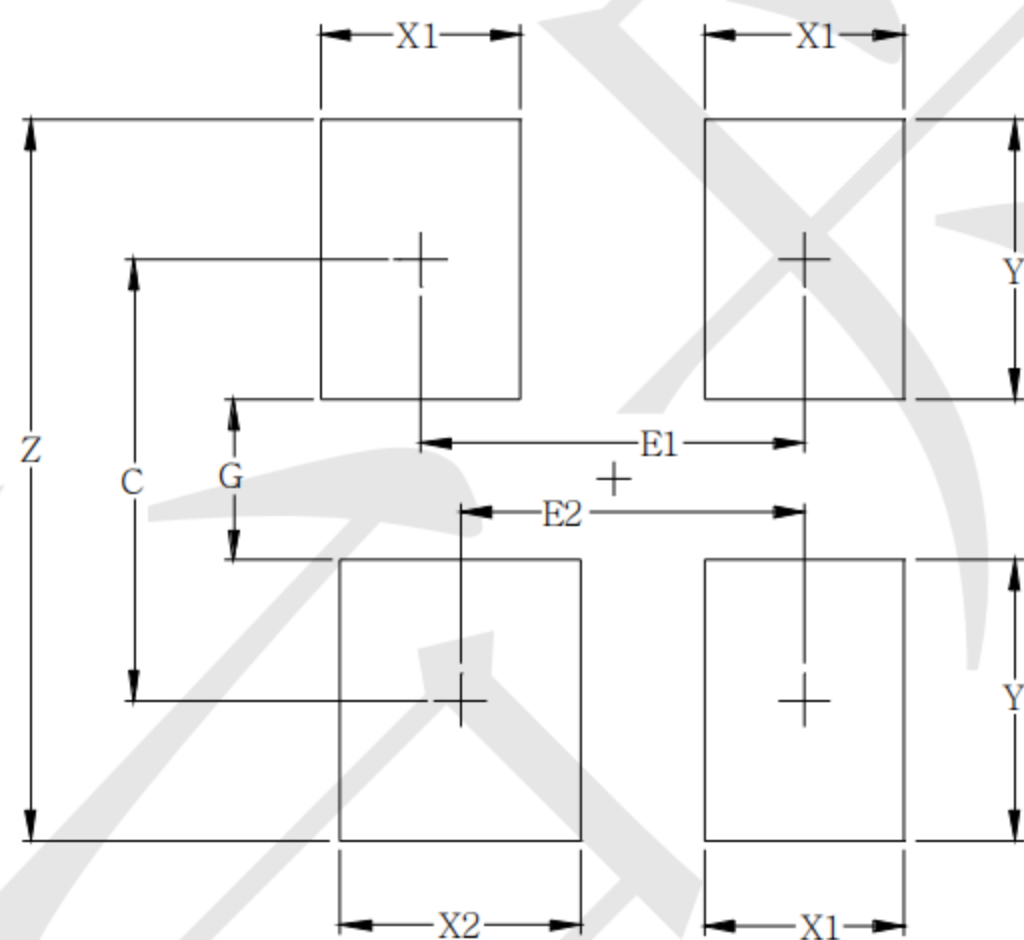
Fig3. Power Derating Curve



Outline Drawing - SOT-143



Land Pattern -SOT-143



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| C | 2.20 | 0.087 |
| E1 | 1.92 | 0.076 |
| E2 | 1.72 | 0.068 |
| G | 0.80 | 0.031 |
| X1 | 1.00 | 0.039 |
| X2 | 1.20 | 0.047 |
| Y | 1.40 | 0.055 |
| Z | 3.60 | 0.141 |