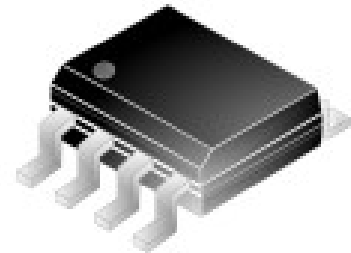




FEATURES

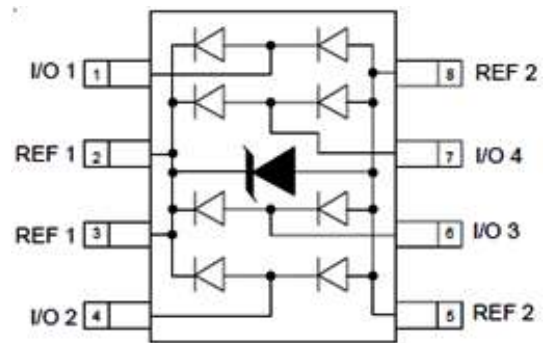
- ◇ 500 Watts peak pulse power per line ($t_p=8/20\mu s$)
- ◇ Protects four I/O lines and power supply line
- ◇ Low capacitance ($<15pF$) for high-speed interfaces
- ◇ Low clamping voltage
- ◇ Low operating voltage
- ◇ Solid-state technology
- ◇ RoHS compliant



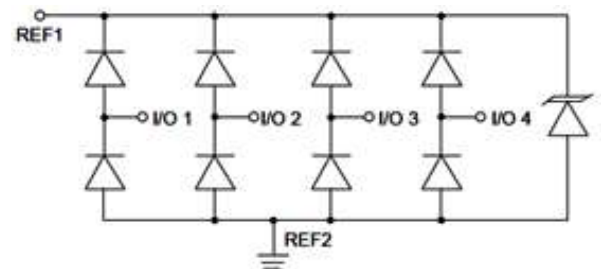
SOP-8

MAIN APPLICATIONS

- ◇ USB power & data line protection
- ◇ HDSL, IDSL secondary IC side protection
- ◇ Video line protection
- ◇ Microcontroller input protection
- ◇ I²C bus protection
- ◇ Base stations



Pin configuration



Circuit diagram

PROTECTION SOLUTION TO MEET

- ◇ IEC61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
- ◇ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◇ IEC61000-4-5 (Lightning) 25A (8/20 μs)

MECHANICAL CHARACTERISTICS

- ◇ JEDEC SOP-8 package
- ◇ Molding compound flammability rating : UL 94V-0
- ◇ Quantity per reel : 4,000pcs
- ◇ Lead finish : lead free
- ◇ Marking code : 05-4RDAXX

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|-----------|-----------------|--------------------|
| Peak pulse power dissipation at 8/20 μs waveform | P_{PP} | 500 | W |
| ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | V_{ESD} | +/- 15 +/- 8 | kV |
| Lead soldering temperature | T_L | 260 (10 sec.) | $^{\circ}\text{C}$ |
| Operating junction temperature range | T_J | -55 to +125 | $^{\circ}\text{C}$ |
| Storage temperature range | T_{STG} | -55 to +150 | $^{\circ}\text{C}$ |

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---------------------------|-----------|--|-----|-----|-----|---------------|
| Reverse working voltage | V_{RWM} | | | | 5 | V |
| Reverse breakdown voltage | V_{BR} | $I_T=1\text{mA}$ | 6 | | | V |
| Reverse leakage current | I_R | $V_{RWM}=5\text{V}$ | | | 10 | μA |
| Clamping voltage | V_C | $I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$ | | | 9.8 | V |
| | | $I_{PP}=10\text{A}, t_p=8/20\mu\text{s}$ | | | 12 | V |
| | | $I_{PP}=25\text{A}, t_p=8/20\mu\text{s}$ | | | 20 | V |
| Junction capacitance | C_J | Between I/O pins and GND $V_R=0\text{V}, f=1\text{MHz}$ | | 8 | 15 | pF |
| | | Between I/O pins $V_R=0\text{V}, f=1\text{MHz}$ | | 4 | | pF |

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Uni-directional)

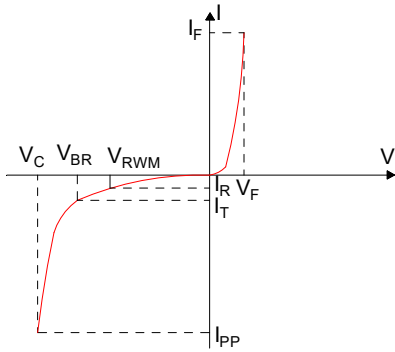


FIG.2: Pulse waveform (8/20 μs)

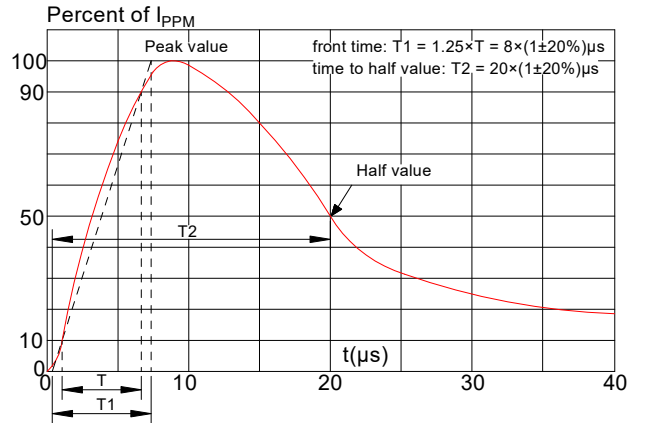


FIG.3: Pulse derating curve

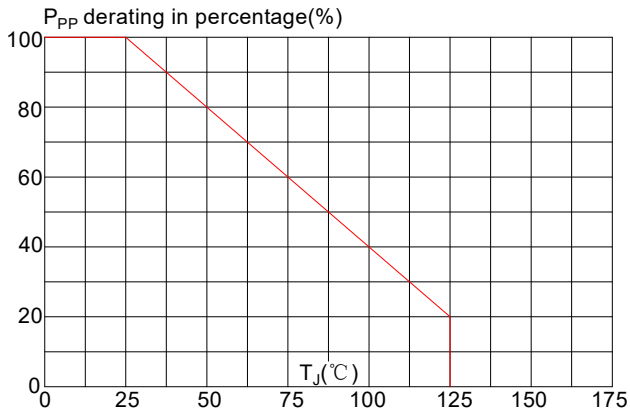
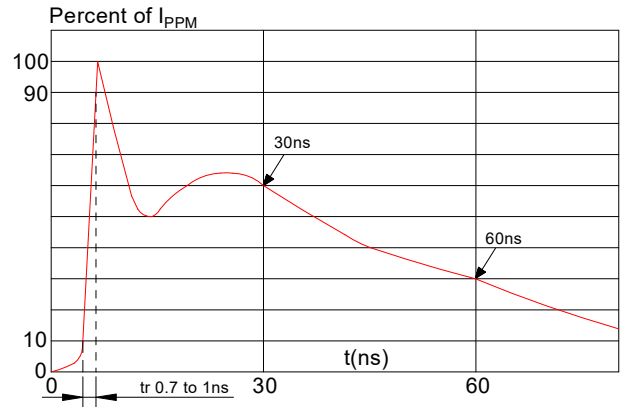
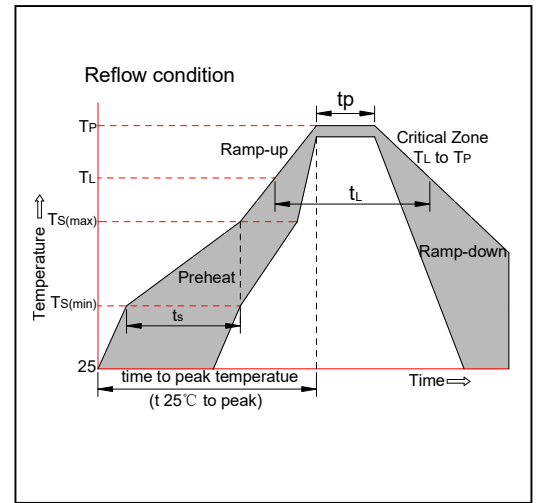


FIG.4: ESD clamping (8kV contact)

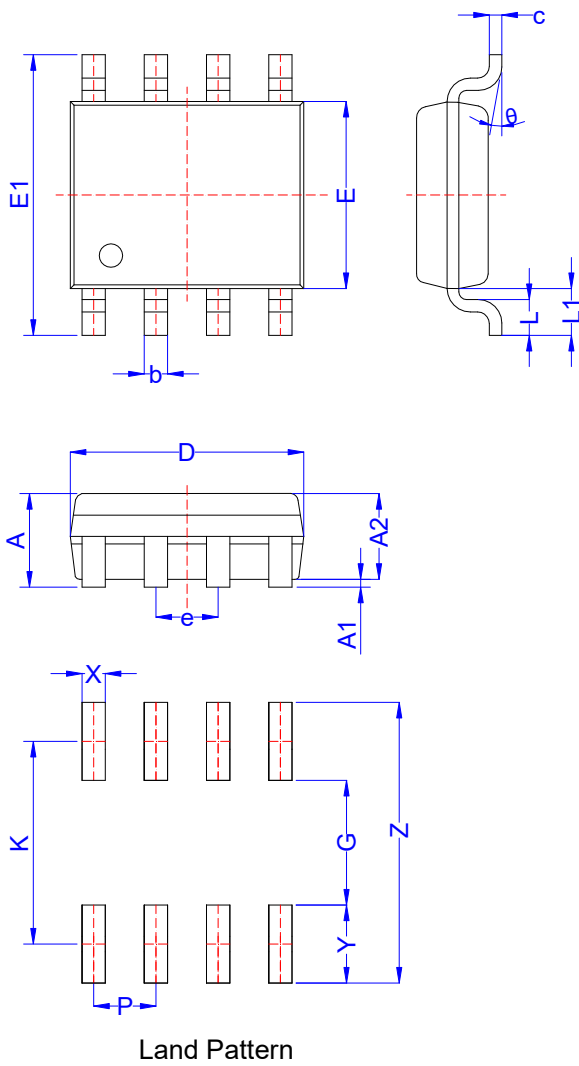


SOLDERING PARAMETERS

| | | |
|---|-----------------------------------|---|
| Reflow Condition | | Pb-Free assembly (see figure at right) |
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150°C |
| | -Temperature Max($T_{s(max)}$) | +200°C |
| | -Time (Min to Max) (t_s) | 60-180 secs. |
| Average ramp up rate (Liquidus Temp (T_L)to peak) | | 3°C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/sec. Max |
| Reflow | -Temperature(T_L)(Liquidus) | +217°C |
| | -Temperature(t_L) | 60-150 secs. |
| Peak Temp (T_p) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp (t_p) | | 20-40secs. |
| Ramp-down Rate | | 6°C/sec. Max |
| Time 25°C to Peak Temp (T_p) | | 8 min. Max |
| Do not exceed | | +260°C |

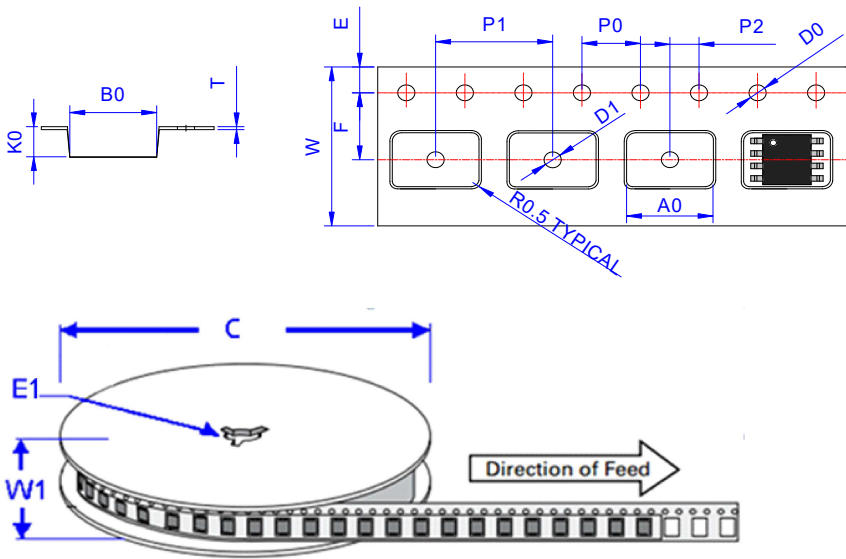


PACKAGE MECHANICAL DATA



| Symbol | Millimeter | | | Inches | | |
|--------|------------|-------|-------|--------|-------|-------|
| | Min | Typ | Max | Min | Typ | Max |
| A | 1.35 | 1.55 | 1.70 | 0.053 | 0.061 | 0.067 |
| A1 | 0.04 | 0.11 | 0.18 | 0.002 | 0.004 | 0.007 |
| A2 | 1.30 | 1.40 | 1.55 | 0.051 | 0.055 | 0.061 |
| b | 0.31 | 0.41 | 0.51 | 0.012 | 0.016 | 0.020 |
| c | 0.17 | 0.21 | 0.25 | 0.007 | 0.008 | 0.010 |
| D | 4.65 | 4.90 | 5.10 | 0.183 | 0.193 | 0.201 |
| E | 3.70 | 3.90 | 4.10 | 0.146 | 0.154 | 0.161 |
| E1 | 5.80 | 6.00 | 6.20 | 0.228 | 0.236 | 0.244 |
| e | 1.14 | 1.27 | 1.40 | 0.045 | 0.050 | 0.055 |
| L | 0.40 | 0.50 | 0.77 | 0.016 | 0.020 | 0.030 |
| L1 | 0.825 | 1.025 | 1.225 | 0.032 | 0.040 | 0.048 |
| θ | 0° | 4° | 8° | 0° | 4° | 8° |
| G | 3.00 | | | 0.118 | | |
| K | 5.20 | | | 0.205 | | |
| P | 1.27 | | | 0.050 | | |
| X | 0.60 | | | 0.024 | | |
| Y | 2.20 | | | 0.087 | | |
| Z | 7.40 | | | 0.291 | | |

TAPE AND REEL SPECIFICATION-SOP-8



| Symbol | Millimeters | Inches |
|--------|-------------|--------|
| | Typ. | Typ. |
| A0 | 6.40 | 0.252 |
| B0 | 5.30 | 0.209 |
| C | 330 | 13.0 |
| D0 | 1.50 | 0.059 |
| D1 | 1.50 | 0.059 |
| E1 | 13.30 | 0.524 |
| E | 1.75 | 0.069 |
| F | 5.50 | 0.217 |
| K0 | 2.10 | 0.083 |
| P0 | 4.00 | 0.157 |
| P1 | 8.00 | 0.315 |
| P2 | 2.00 | 0.079 |
| T | 0.24 | 0.009 |
| W | 12.00 | 0.472 |
| W1 | 15.70 | 0.618 |

| PART No. | PACKAGE TYPE | QUANTITY(PCS) REEL | DESCRIPTION |
|------------|--------------|-----------------------|-------------------|
| JEU05-4RDA | SOP-8 | 4,000 | 13 inch reel pack |

MARKING CODE

| Part Number | Marking Code |
|-------------|--|
| JEU05-4RDA | <p>05-4RDAXX</p> <p>05-4RDA: Device code XX: Date code</p> |


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