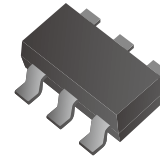


CEH2315-HF

P-Channel
RoHS Device
Halogen Free



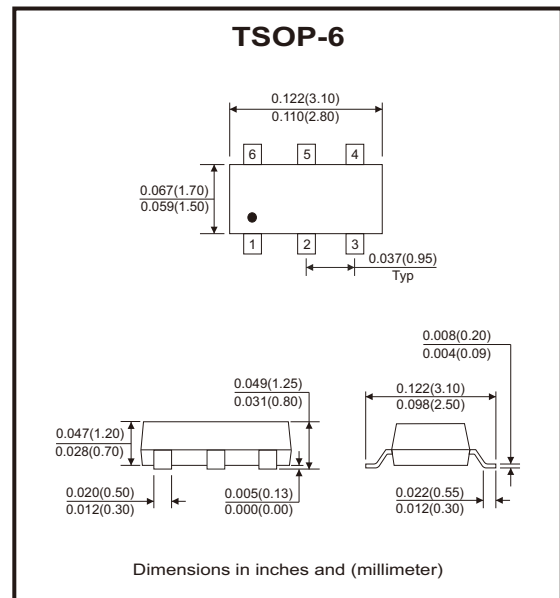
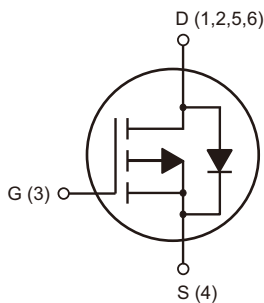
Features

- High density cell design for extremely low RDS(ON).
- Rugged and reliable.

Mechanical data

- Case : TSOP-6, molded plastic.
- Mounting position: Any.

Circuit Diagram



Maximum Ratings (at Ta=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Drain-source voltage | V _{DS} | -30 | V |
| Gate-source voltage | V _{GS} | ±20 | V |
| Drain current-continuous | I _D | -5 | A |
| Drain current-pulsed (Note 1) | I _{DM} | -20 | A |
| Maximum power dissipation | P _D | 2 | W |
| Thermal resistance, Junction to ambient (Note 2) | R _{θJA} | 62.5 | °C/W |
| Operating and storage temperature range | T _J , T _{STG} | -55 to +150 | °C |

Notes: 1. Repetitive rating: pulse width limited by maximum junction temperature.
2. Surface mounted on FR4 board, t < 5 sec.

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

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------------|--|-----|------|------|------|
| Off characteristics | | | | | | |
| Drain-source breakdown voltage | BV _{DSS} | V _{GS} = 0V, I _D = -250μA | -30 | | | V |
| Zero gate voltage drain current | I _{DSS} | V _{DS} = -30V, V _{GS} = 0V | | | -1 | μA |
| Gate body leakage current, forward | I _{GSSF} | V _{GS} = 20V, V _{DS} = 0V | | | 100 | nA |
| Gate body leakage current, reverse | I _{GSSR} | V _{GS} = -20V, V _{DS} = 0V | | | -100 | nA |
| On characteristics (Note 1) | | | | | | |
| Gate threshold voltage | V _{GS(th)} | V _{GS} = V _{DS} , I _D = -250μA | -1 | | -3 | V |
| Static drain-source on-resistance | R _{DS(on)} | V _{GS} = -10V, I _D = -3.8A | | 40 | 50 | mΩ |
| | | V _{GS} = -4.5V, I _D = -3A | | 60 | 85 | |
| Dynamic characteristics (Note 2) | | | | | | |
| Input capacitance | C _{iss} | V _{DS} = -15V, V _{GS} = 0V, f = 1MHz | | 650 | | pF |
| Output capacitance | C _{oss} | | | 130 | | |
| Reverse transfer capacitance | C _{rss} | | | 75 | | |
| Switching characteristics (Note 2) | | | | | | |
| Turn-on delay time | t _{d(on)} | V _{DD} = -15V, I _D = -1A, V _{GS} = -10V, R _{GEN} = 6Ω | | 10 | | nS |
| Turn-on rise time | t _r | | | 4 | | |
| Turn-off delay time | t _{d(off)} | | | 36 | | |
| Turn-off fall time | t _f | | | 6 | | |
| Total gate charge | Q _g | V _{DS} = -15V, I _D = -3.6A, V _{GS} = -10V | | 11.2 | | nC |
| Gate-source charge | Q _{gs} | | | 1.7 | | |
| Gate-drain charge | Q _{gd} | | | 2.0 | | |
| Drain-source diode characteristics and maximum ratings | | | | | | |
| Drain-source diode forward current (Note 3) | I _S | | | | -1.6 | A |
| Drain-source diode forward voltage (Note 1) | V _{SD} | V _{GS} = 0V, I _S = -1.6A | | | -1.2 | V |

- Notes: 1. Pulse width ≤ 300μs, duty cycle ≤ 2%.
 2. Guaranteed by design, not subject to production testing.
 3. Surface mounted on FR4 board, t < 5 sec.

Rating and Characteristic Curves (CEH2315-HF)

Fig.1 - Output Characteristics

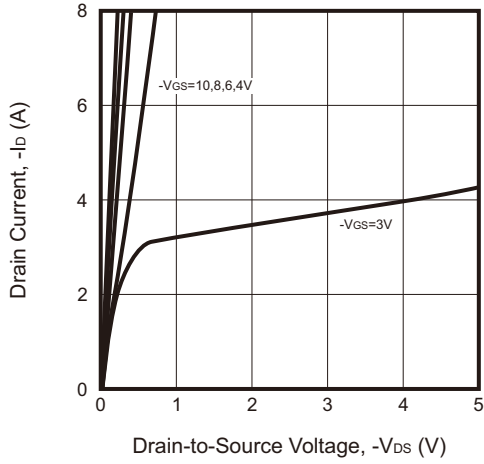


Fig.2 - Transfer Characteristics

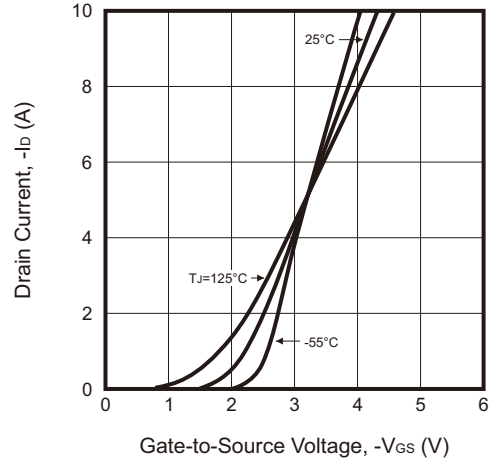


Fig.3 - Capacitance

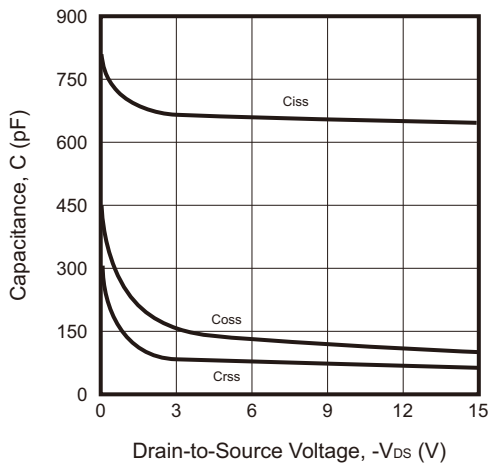


Fig.4 - On-Resistance Variation With Temperature

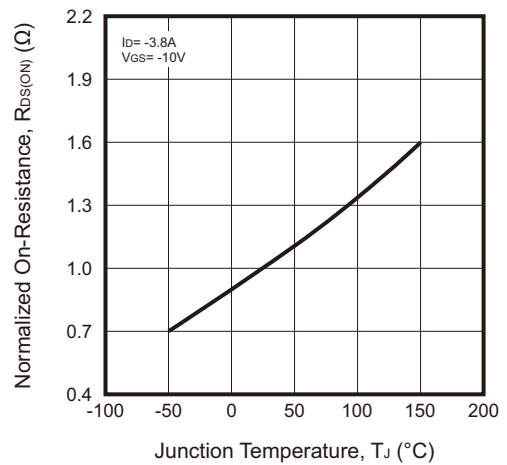


Fig.5 - Gate Threshold Variation With Temperature

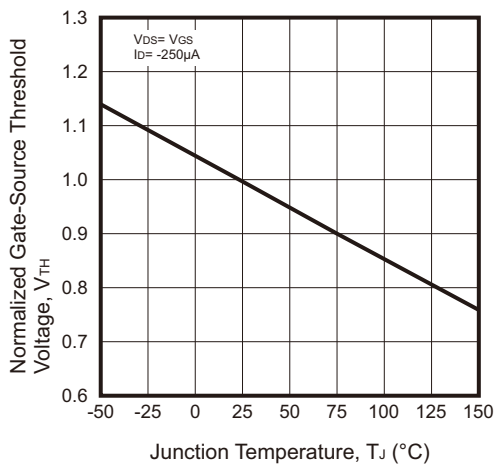
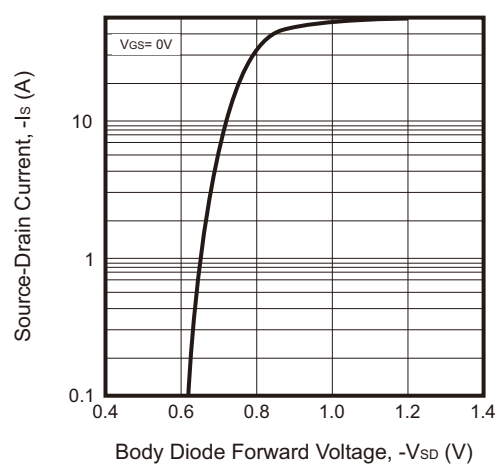


Fig.6 - Body Diode Forward Voltage Variation With Source Current



Rating and Characteristic Curves (CEH2315-HF)

Fig.7 - Gate Charge

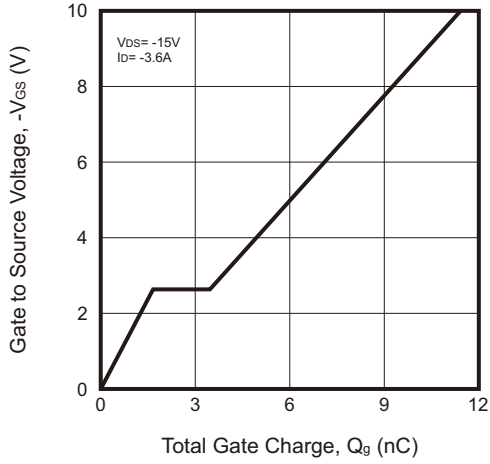


Fig.8 - Max. Safe Operating Area

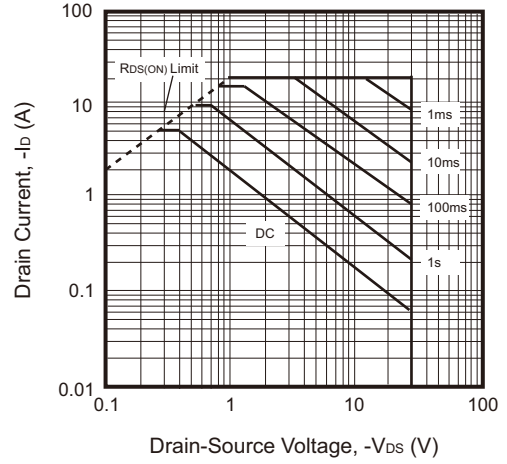
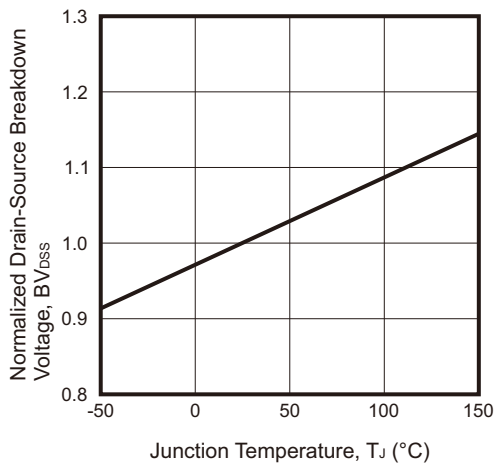
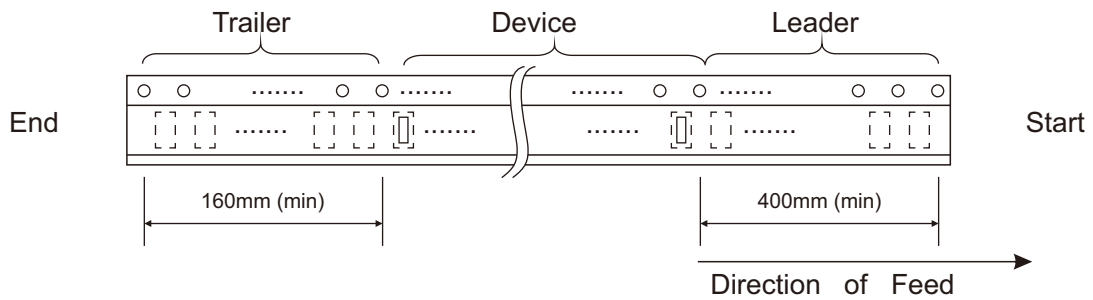
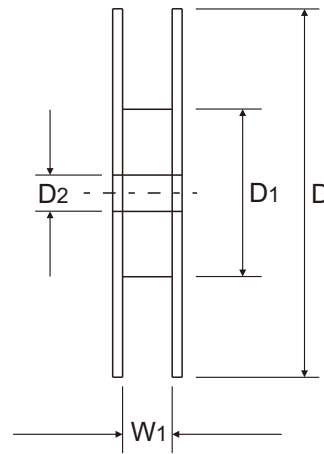
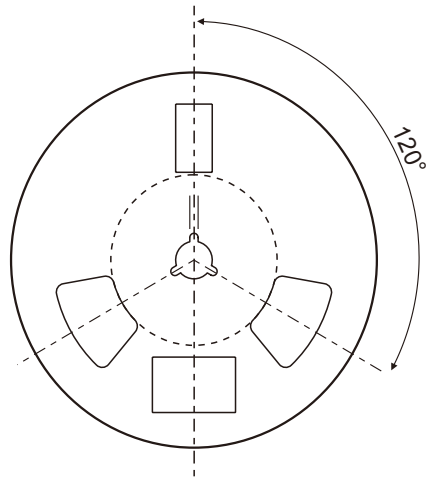
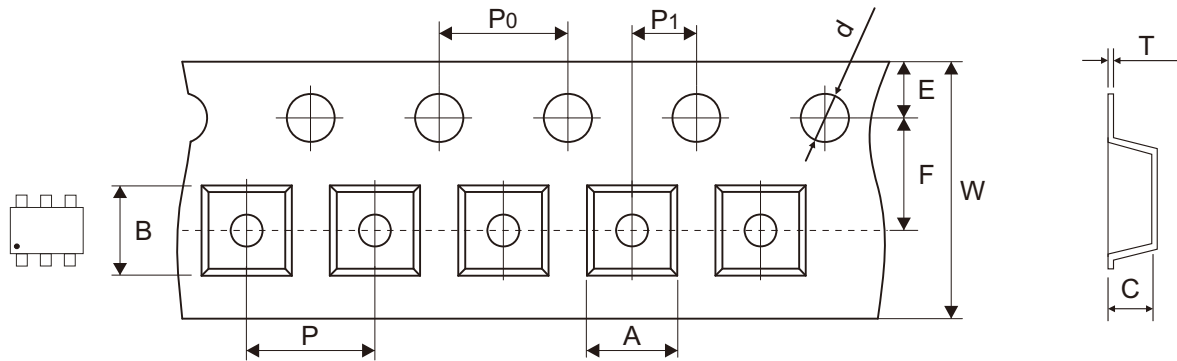


Fig.9 - Breakdown Voltage Variation vs Temperature



Reel Taping Specification

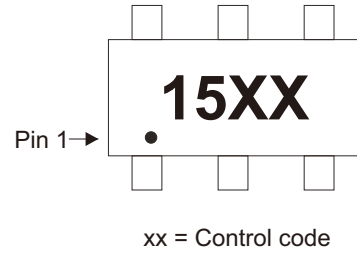


| TSOP-6 | SYMBOL | A | B | C | d | D | D1 | D2 |
|--------|--------|---------------|---------------|---------------|--------------------------|---------------|---------------|---------------|
| | (mm) | 3.20 ± 0.10 | 3.05 ± 0.10 | 1.20 ± 0.10 | 1.50 + 0.10 - 0.00 | 178 ± 1.00 | 54.00 ± 0.50 | 13.50 ± 0.20 |
| | (inch) | 0.126 ± 0.004 | 0.120 ± 0.004 | 0.047 ± 0.004 | 0.059 + 0.004 - 0.000 | 7.008 ± 0.039 | 2.126 ± 0.020 | 0.531 ± 0.008 |

| TSOP-6 | 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 | 0.25 ± 0.05 | 8.00 ± 0.15 | 9.50 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.010 ± 0.002 | 0.315 ± 0.006 | 0.374 ± 0.039 |

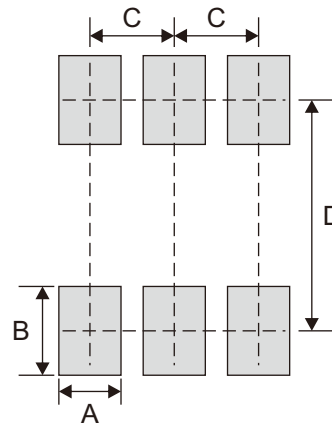
Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| CEH2315-HF | 15 |



Suggested P.C.B. PAD Layout

| SIZE | TSOP-6 | |
|------|----------|-----------|
| | (mm) | (inch) |
| A | 0.70 Min | 0.028 Min |
| B | 1.00 Min | 0.039 Min |
| C | 0.95 | 0.037 |
| D | 2.60 | 0.102 |



Standard Packaging

| Case Type | REEL PACK | |
|-----------|------------|------------------|
| | REEL (pcs) | Reel Size (inch) |
| TSOP-6 | 3,000 | 7 |