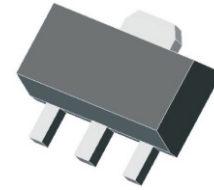


CJA03N10-HF

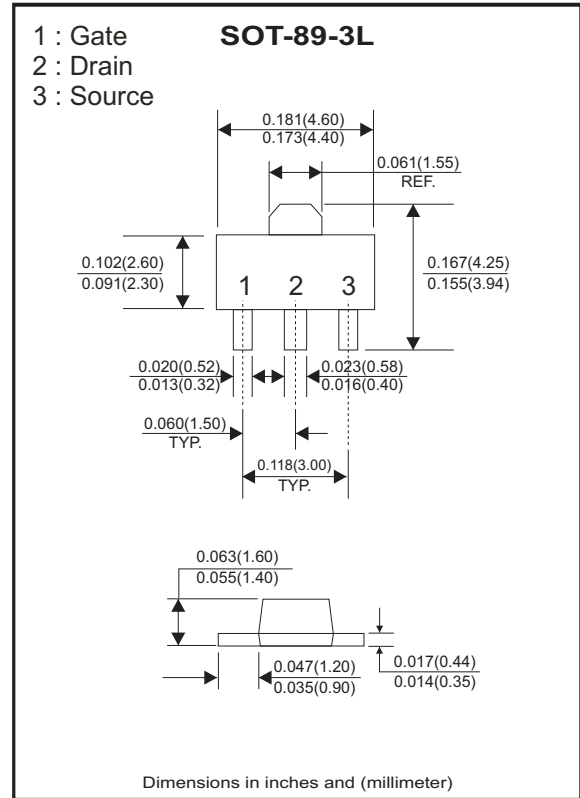
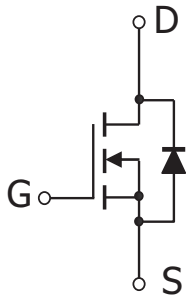
**N-Channel
RoHS Device
Halogen Free**



Features

- Special process technology for high ESD capability.
- High density cell design for extremely low $R_{DS(ON)}$.
- Good stability and uniformity with high EAS.
- Excellent package for good heat dissipation.

Circuit Diagram



Maximum Ratings (at $T_a=25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | Units |
|--|-----------------|-------------|--------------------|
| Drain-source voltage | V_{DS} | 100 | V |
| Gate-source voltage | V_{GS} | ± 20 | V |
| Continuous drain current | I_D | 3 | A |
| Pulsed drain current (Note 1) | I_{DM} | 20 | A |
| Power dissipation | P_D | 0.5 | W |
| Thermal resistance from Junction to ambient (Note 2) | $R_{\theta JA}$ | 250 | $^\circ\text{C/W}$ |
| Junction temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{STG} | -55 to +150 | $^\circ\text{C}$ |

Note:

1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , $t \leq 10\text{s}$.

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

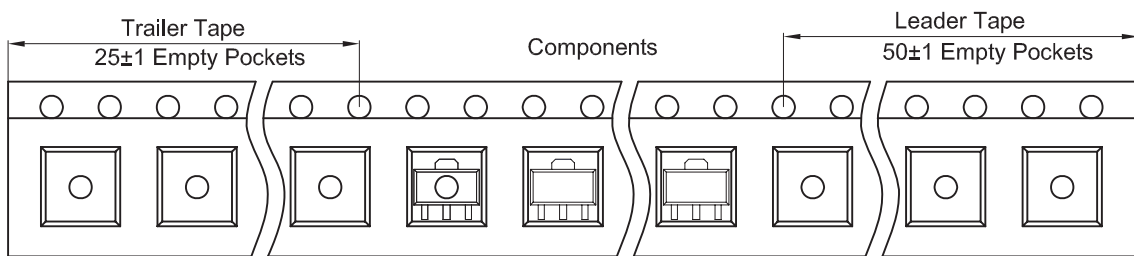
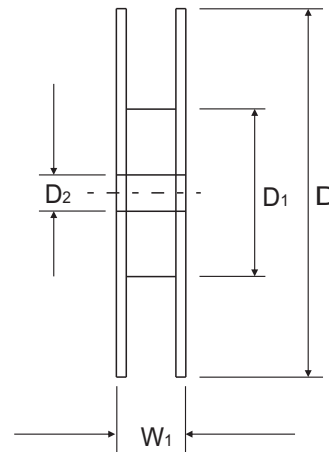
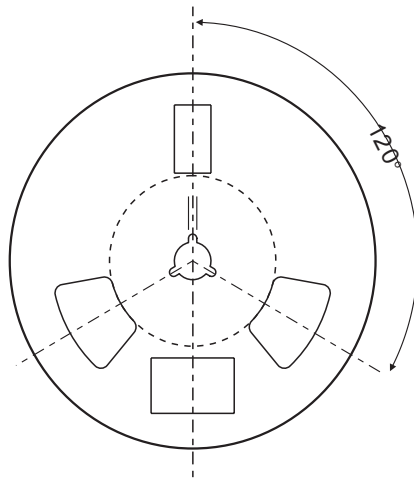
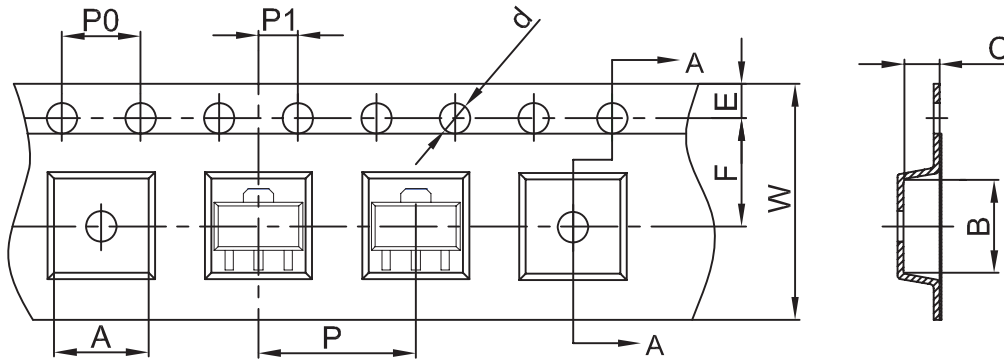
| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|---|---|---------------|-----|------|-----------|------------|
| Static Characteristics | | | | | | |
| Drain-Source breakdown voltage | $V_{GS}=0V, I_D=250\mu A$ | $V_{(BR)DSS}$ | 100 | | | V |
| Zero gate voltage drain current | $V_{DS}=100V, V_{GS}=0V$ | I_{DSS} | | | 1 | μA |
| Gate-body leakage current | $V_{DS}=0V, V_{GS}=\pm 20V$ | I_{GSS} | | | ± 100 | nA |
| Gate-threshold voltage (note 1) | $V_{DS}=V_{GS}, I_D=250\mu A$ | $V_{GS(th)}$ | 1 | | 2 | V |
| Drain-source on-resistance (note 1) | $V_{GS}=10V, I_D=5A$ | $R_{DS(ON)}$ | | | 140 | m Ω |
| Forward transconductance (note 1) | $V_{DS}=5V, I_D=2.9A$ | g_{FS} | 3 | | | S |
| Diode forward voltage (note 1) | $I_S=3A, V_{GS}=0V$ | V_{SD} | | | 1.2 | V |
| Dynamic Characteristics (note 2) | | | | | | |
| Input capacitance | $V_{DS}=25V, V_{GS}=0V, f=1MHz$ | C_{iss} | | 690 | | pF |
| Output capacitance | | C_{oss} | | 120 | | |
| Reverse transfer capacitance | | C_{rss} | | 90 | | |
| Switching Characteristics (note 2) | | | | | | |
| Turn-on delay time | $V_{DS}=30V, V_{GS}=10V, I_D=2A, R_{GEN}=2.5\Omega, R_L=15\Omega$ | $t_{d(on)}$ | | 11 | | ns |
| Turn-on rise time | | t_r | | 7.4 | | |
| Turn-off delay time | | $t_{d(off)}$ | | 35 | | |
| Turn-off fall time | | t_f | | 9.1 | | |
| Total gate charge | $V_{DS}=30V, V_{GS}=10V, I_D=3A$ | Q_g | | 15.5 | | nC |
| Gate-source charge | | Q_{gs} | | 3.2 | | |
| Gate-drain charge | | Q_{gd} | | 4.7 | | |

Note:

1. Pulse test ; Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
2. Guaranteed by design, not subject to producing.

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Reel Taping Specification



| SOT-89-3L | SYMBOL | A | B | C | d | D | D1 | D2 |
|-----------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | (mm) | 4.85 ± 0.10 | 4.45 ± 0.10 | 1.85 ± 0.10 | 1.50 ± 0.10 | 180 ± 2.00 | 60.00 ± 1.00 | R32.00 ± 1.00 |
| | (inch) | 0.191 ± 0.004 | 0.175 ± 0.004 | 0.073 ± 0.004 | 0.059 ± 0.004 | 7.087 ± 0.079 | 2.362 ± 0.039 | 1.260 ± 0.039 |

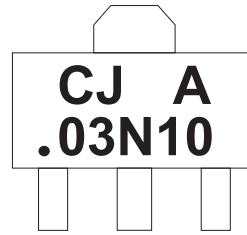
| SOT-89-3L | SYMBOL | E | F | P | P0 | P1 | W | W1 |
|-----------|--------|---------------|---------------|---------------|---------------|---------------|-------------------------|---------------|
| | (mm) | 1.75 ± 0.10 | 5.50 ± 0.10 | 8.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 12.00 + 0.30 / - 0.10 | 16.50 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.217 ± 0.004 | 0.315 ± 0.004 | 0.158 ± 0.004 | 0.079 ± 0.004 | 0.472 + 0.012 / - 0.004 | 0.650 ± 0.039 |

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REV:A

Marking Code

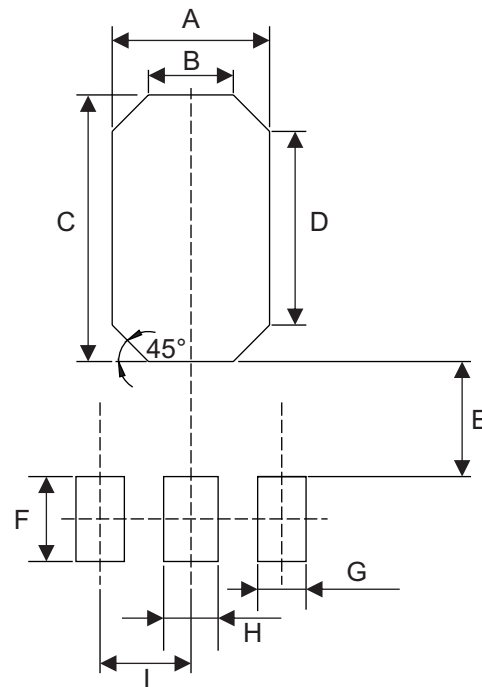
| Part Number | Marking Code |
|-------------|----------------|
| CJA03N10-HF | CJ A .03N10 |



xx/xxx = Product type marking code

Suggested PAD Layout

| SIZE | SOT-89-3L | |
|------|-----------|--------|
| | (mm) | (inch) |
| A | 2.60 | 0.102 |
| B | 1.40 | 0.055 |
| C | 4.40 | 0.173 |
| D | 3.20 | 0.126 |
| E | 1.90 | 0.075 |
| F | 1.40 | 0.055 |
| G | 0.80 | 0.032 |
| H | 0.90 | 0.035 |
| I | 1.50 | 0.059 |



Standard Packaging

| Case Type | REEL PACK | |
|-----------|-----------------|---------------------|
| | REEL (pcs) | Reel Size (inch) |
| SOT-89-3L | 1,000 | 7 |

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