CJA03N10-HF

N-Channel
RoHS Device
Halogen Free

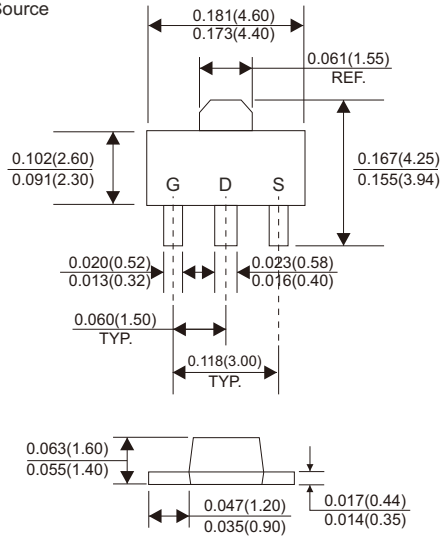


Features

- 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.

SOT-89-3L

1 : Gate
2 : Drain
3 : Source

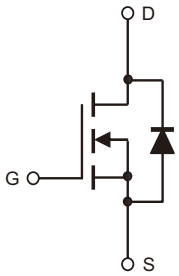


Dimensions in inches and (millimeter)

Mechanical data

- Case: SOT-89-3L, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Mounting position: Any.

Circuit Diagram



Maximum Ratings (at Ta=25°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	°C/W
Junction temperature	T_J	150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

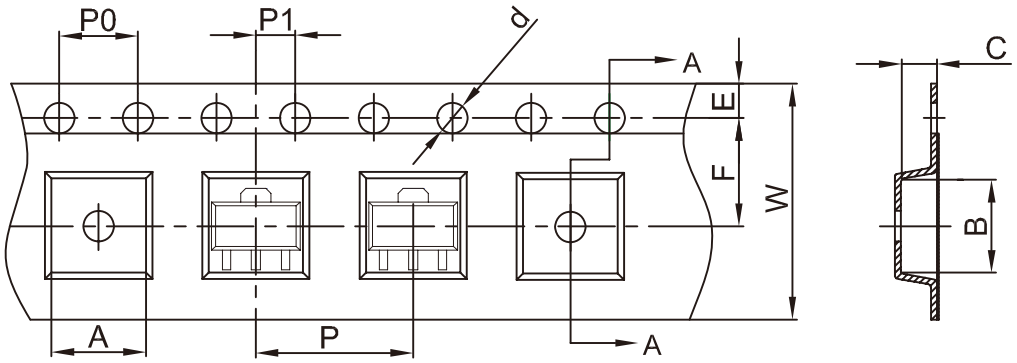
Notes: 1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , t≤10s.

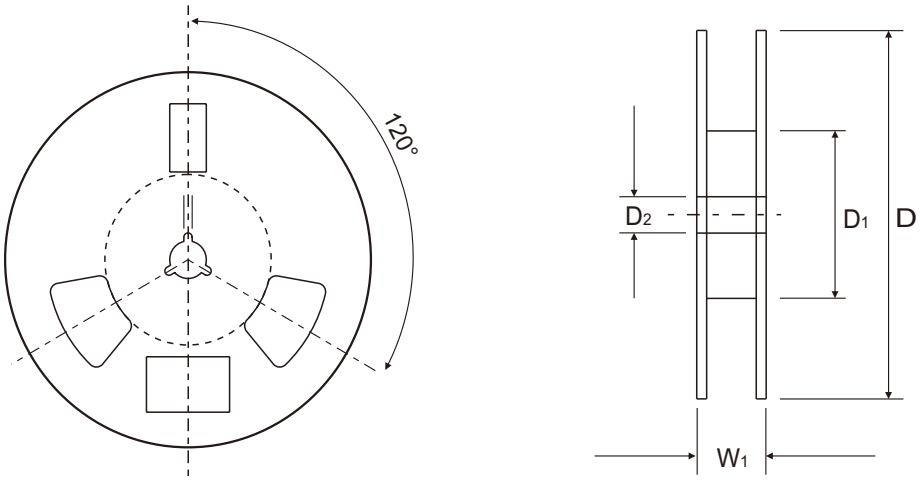
Electrical Characteristics (T_A=25°C unless otherwise noted)

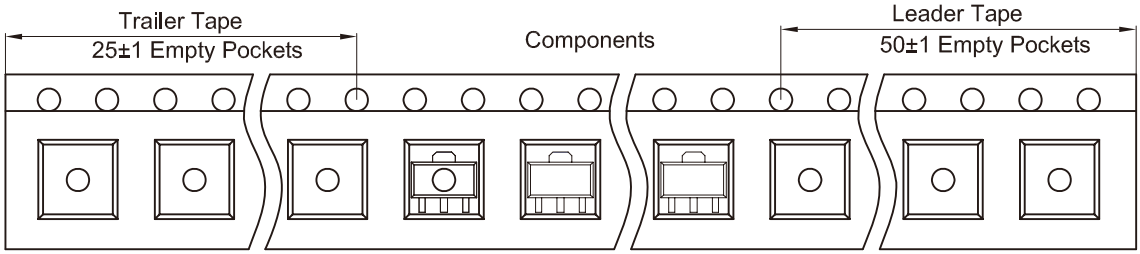
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source breakdown voltage	V_{GS}=0V, I_D=250μA	$V_{(BR)DSS}$	100			V
Zero gate voltage drain current	V_{DS}=100V, V_{GS}=0V	I_{DSS}			1	μA
Gate-body leakage current	V_{DS}=0V, V_{GS}=±20V	I_{GSS}			±100	nA
Gate-threshold voltage (Note 1)	V_{DS}=V_{GS}, I_D=250μA	$V_{GS(th)}$	1		2	V
Drain-source on-resistance (Note 1)	V_{GS}=10V, I_D=5A	$R_{DS(ON)}$			140	mΩ
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}=2.5Ω, R_L=15Ω	$t_{d(on)}$		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		

Notes: 1. Pulse test ; Pulse width ≤300μs, Duty cycle ≤ 2%
2. Guaranteed by design, not subject to producting.

Reel Taping Specification





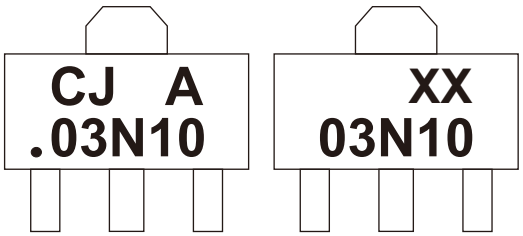


	SYMBOL	A	B	C	d	D	D_1	D_2
SOT-89-3L	(mm)	4.85 ± 0.10	4.45 ± 0.10	1.85 ± 0.10	1.50 + 0.10	180 ± 2.00	60.00 ± 1.00	R32.00 ± 1.00
	(inch)	0.191 ± 0.004	0.175± 0.004	0.073 ± 0.004	0.059 + 0.004	7.087 ± 0.079	2.362 ± 0.039	1.260 ± 0.039

	SYMBOL	E	F	P	P_0	P_1	W	W_1
SOT-89-3L	(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

Marking Code

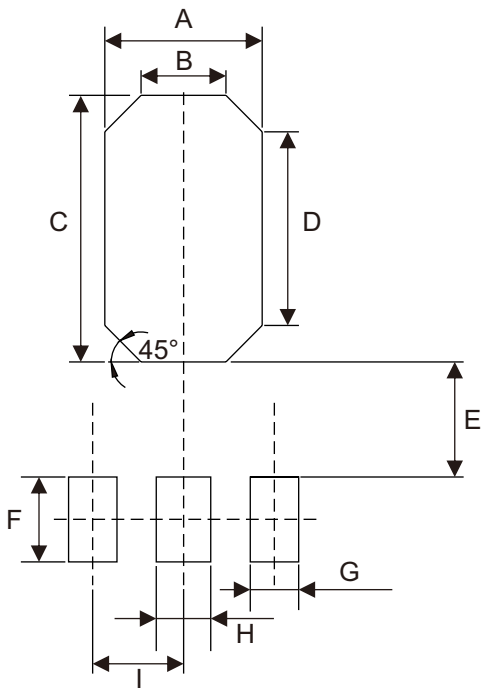
Part Number	Marking Code	
CJA03N10-HF	CJ A .03N10	03N10



xx = Control code

Suggested P.C.B. 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