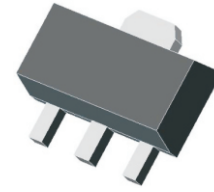


# CJA03N10-HF

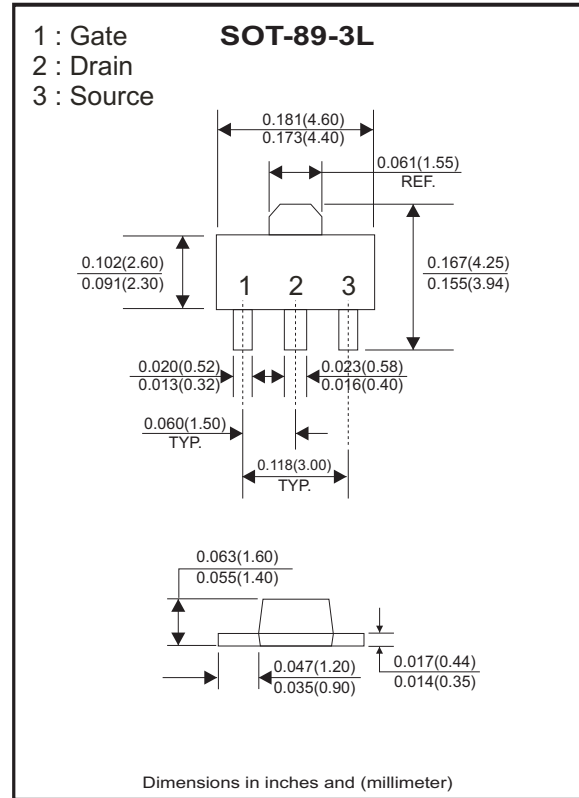
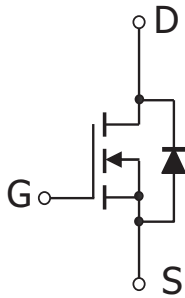
**N-Channel  
RoHS Device  
Halogen Free**



## 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	$V_{GS}$	$\pm 20$	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 ,  $t \leq 10\text{s}$ .

Company reserves the right to improve product design , functions and reliability without notice.

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

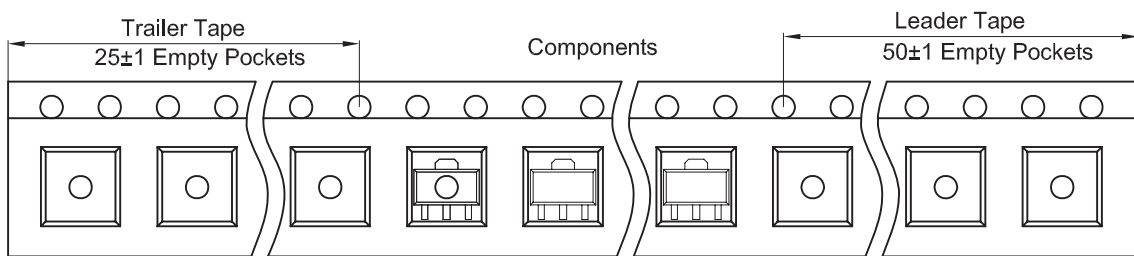
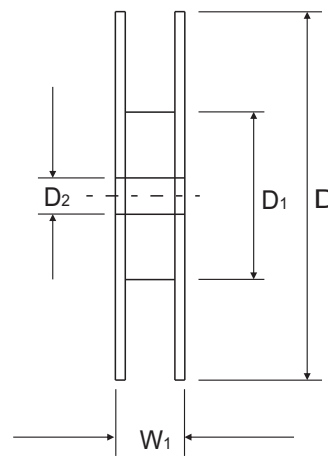
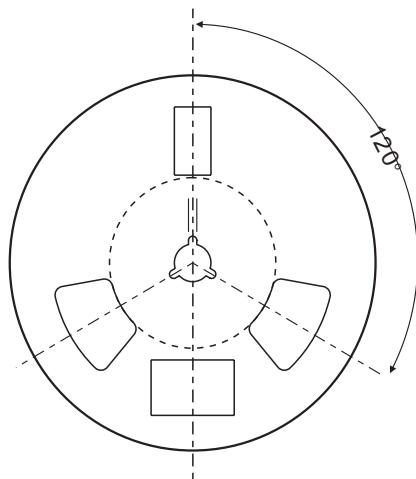
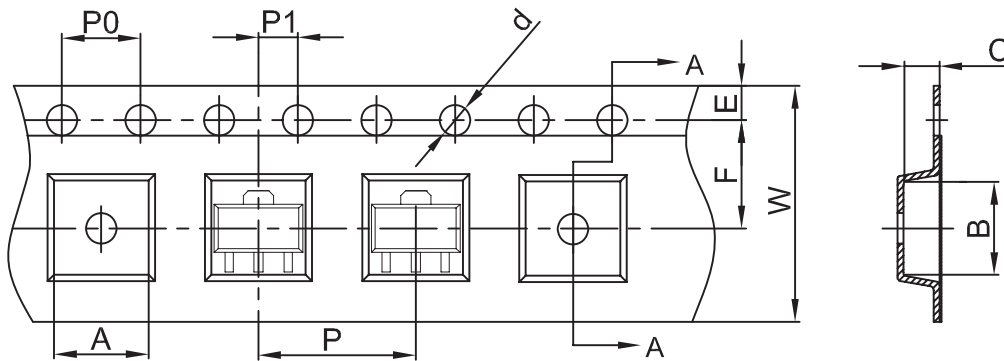
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source breakdown voltage	$V_{GS}=0V, I_D=250\mu A$	$V_{(BR)DSS}$	100			V
Zero gate voltage drain current	$V_{DS}=100V, V_{GS}=0V$	$I_{DSS}$			1	$\mu A$
Gate-body leakage current	$V_{DS}=0V, V_{GS}=\pm 20V$	$I_{GSS}$			$\pm 100$	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 $\Omega$
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
<b>Dynamic Characteristics (note 2)</b>						
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		
<b>Switching Characteristics (note 2)</b>						
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

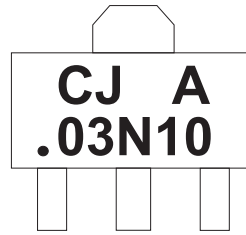
SOT-89-3L	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	5.50 ± 0.10	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	12.00 + 0.30 / - 0.10	16.50 ± 1.00
	(inch)	0.069 ± 0.004	0.217 ± 0.004	0.315 ± 0.004	0.158 ± 0.004	0.079 ± 0.004	0.472 + 0.012 / - 0.004	0.650 ± 0.039

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REV:A

## Marking Code

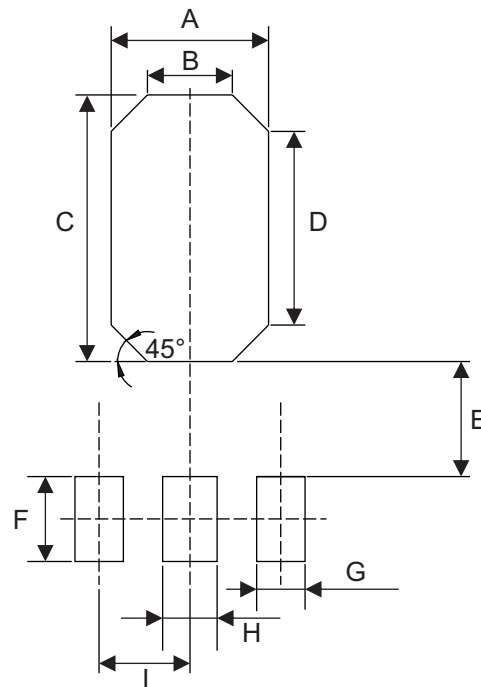
Part Number	Marking Code
CJA03N10-HF	CJ A .03N10



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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