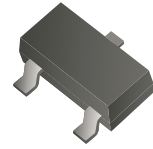


# CJ3400-HF

**N-Channel**  
**RoHS Device**  
**Halogen Free**



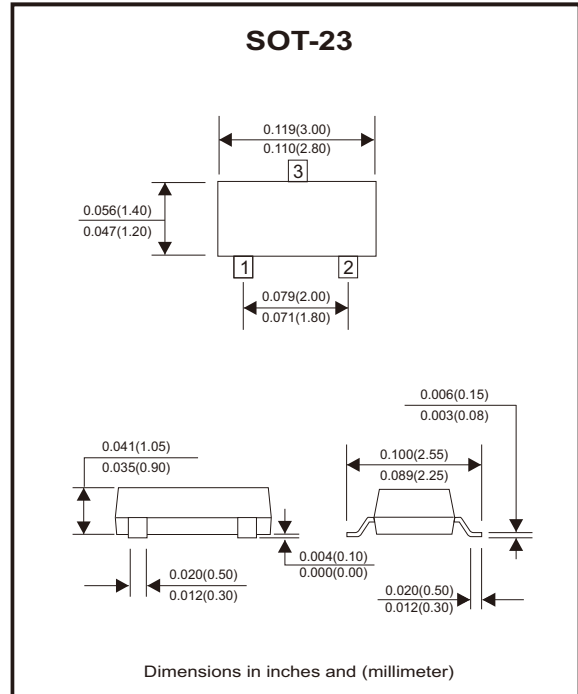
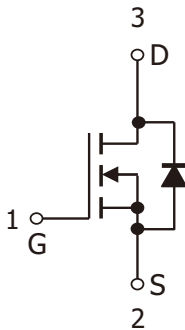
## Features

- N-Channel Enhancement mode field effect transistor.
- High dense cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability.

## Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.

## Circuit diagram



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

Parameter	Symbol	Value	Units
Drain-source voltage	$V_{DS}$	30	V
Gate-source voltage	$V_{GS}$	$\pm 12$	V
Continuous drain current	$I_D$	5.8	A
Drain current-pulsed (note 1)	$I_{DM}$	30	A
Power dissipation	$P_D$	350	mW
Thermal resistance from Junction to ambient (note 2)	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction temperature	$T_J$	150	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

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

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
<b>Off Characteristics</b>						
Drain-Source breakdown voltage	$V_{GS}=0V, I_D=250\mu A$	$V_{(BR)DSS}$	30			V
Zero gate voltage drain current	$V_{DS}=24V, V_{GS}=0V$	$I_{DSS}$			1	$\mu A$
Gate-Source leakage current	$V_{GS}=\pm 12V, V_{DS}=0V$	$I_{GSS}$			$\pm 100$	nA
<b>On Characteristics</b>						
Static drain-source on-resistance (note 3)	$V_{GS}=10V, I_D=5.8A$	$R_{DS(ON)}$			35	m $\Omega$
	$V_{GS}=4.5V, I_D=5A$				40	
	$V_{GS}=2.5V, I_D=4A$				52	
Forward transconductance	$V_{DS}=5V, I_D=5A$	$g_{FS}$	8			S
Gate threshold voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	0.7		1.4	V
<b>Dynamic Characteristics (note 3,4)</b>						
Input capacitance	$V_{DS}=15V, V_{GS}=0V, f=1MHz$	$C_{iss}$			1050	pF
Output capacitance		$C_{oss}$		99		
Reverse transfer capacitance		$C_{rss}$		77		
Gate resistance	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	$R_g$			3.6	$\Omega$
<b>Switching Characteristics (note 3,4)</b>						
Turn-on delay time	$V_{GS}=10V, V_{DS}=15V, R_L=2.7\Omega, R_{GEN}=3\Omega$	$t_{d(on)}$			5	ns
Turn-on rise time		$t_r$			7	
Turn-off delay time		$t_{d(off)}$			40	
Turn-off Fall time		$t_f$			6	
<b>Drain-source diode characteristics and maximum ratings</b>						
Diode forward voltage (note 3)	$I_S=1A, V_{GS}=0V$	$V_{SD}$			1	V

Note:

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface mounted on FR4 Board,  $t < 5sec$ .
3. Pulse test: Pulse width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

## RATING AND CHARACTERISTIC CURVES (CJ3400-HF)

Fig.1 - Output Characteristics

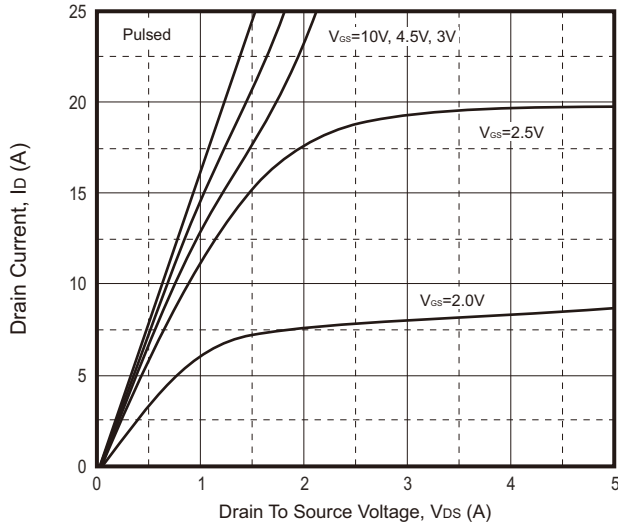


Fig.2 - Transfer Characteristics

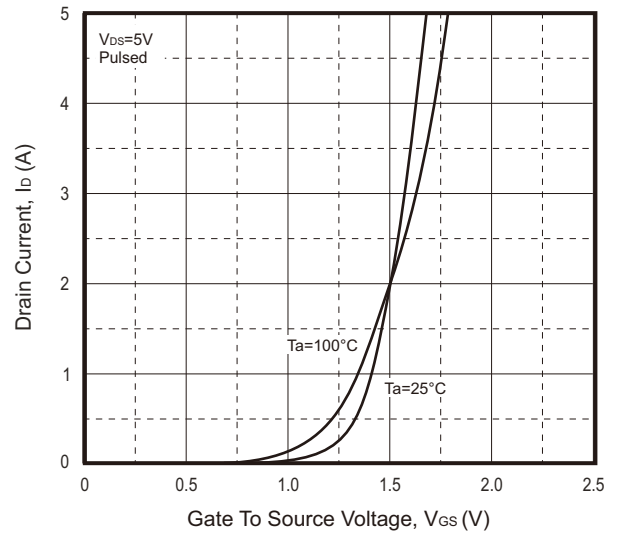


Fig.3 -  $R_{DS(ON)} - I_D$

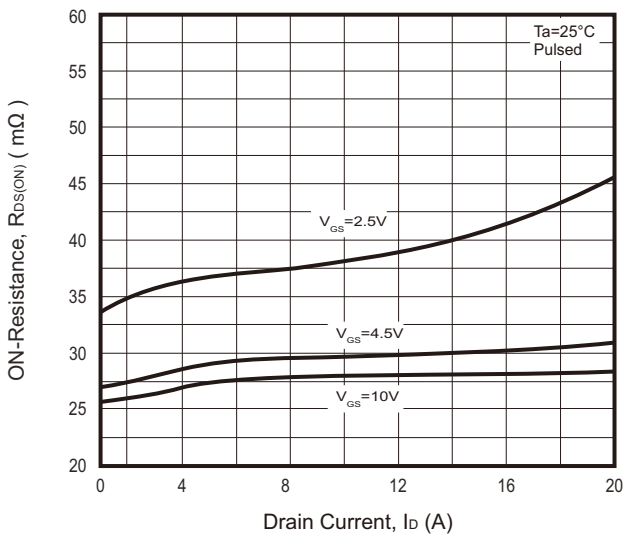


Fig.4-  $R_{DS(ON)} - V_{GS}$

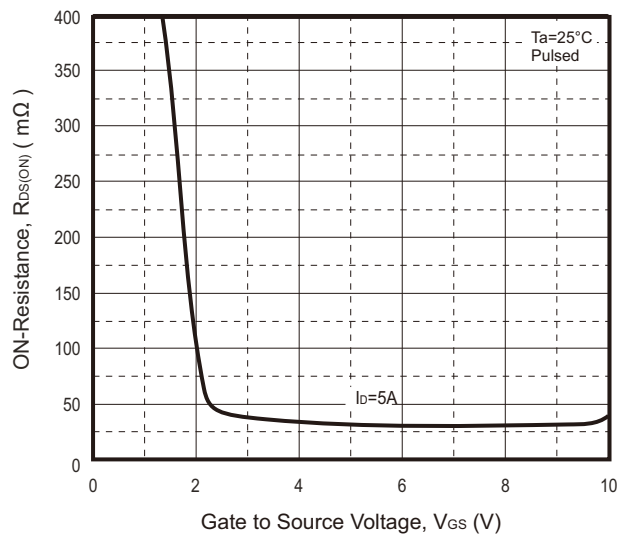


Fig.5 -  $I_S - V_{SD}$

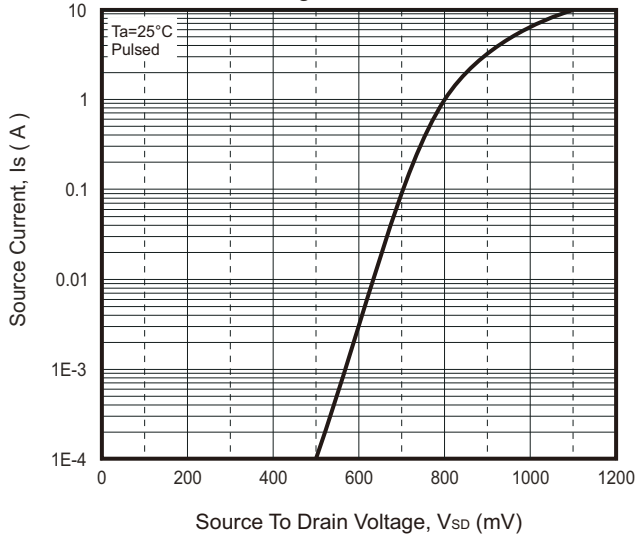
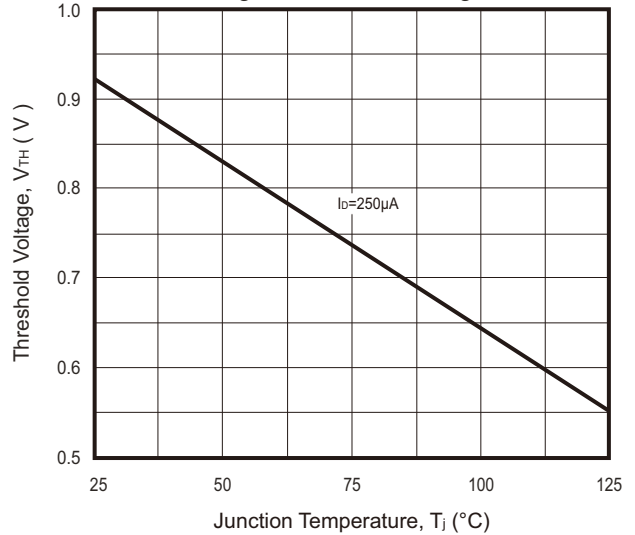


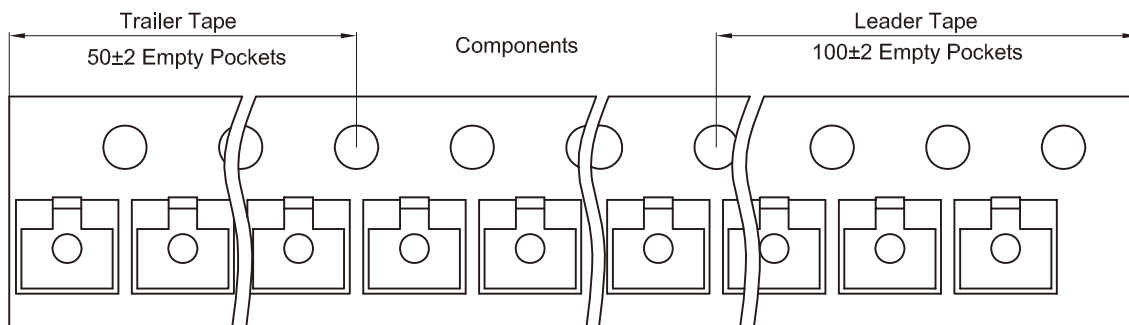
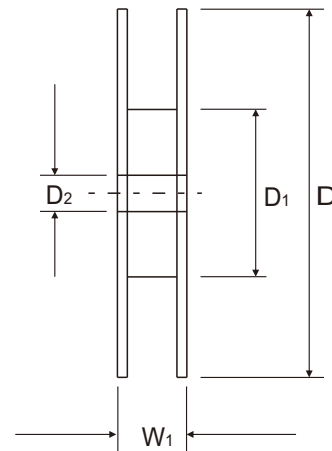
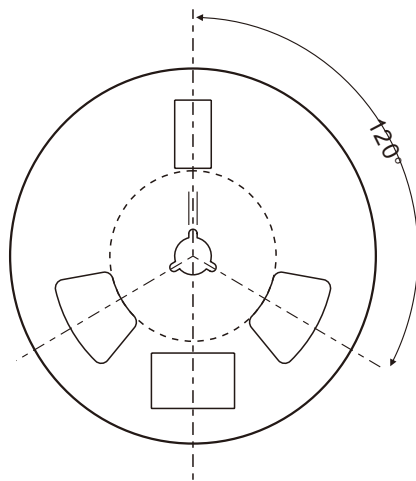
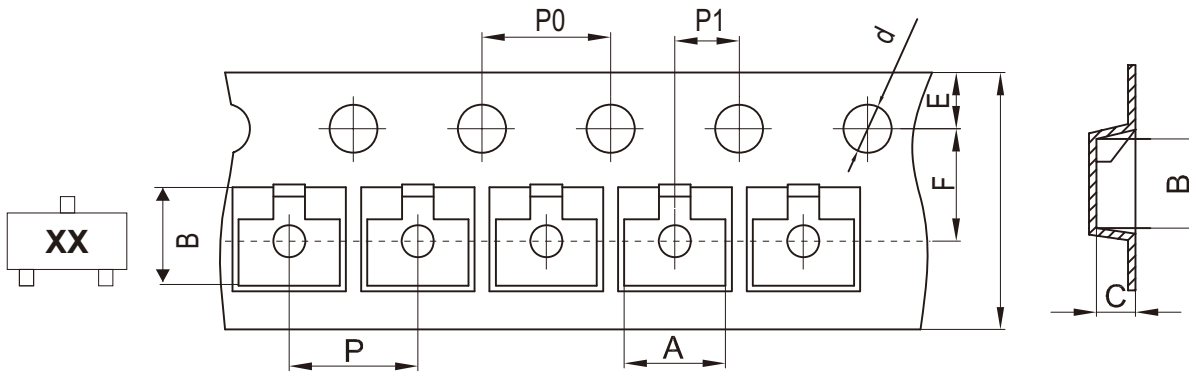
Fig.6 - Threshold Voltage



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

REV:B

# Reel Taping Specification



SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

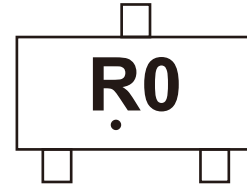
SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 + 0.30 / - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 + 0.012 / - 0.004	0.484 ± 0.039

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REV:B

## Marking Code

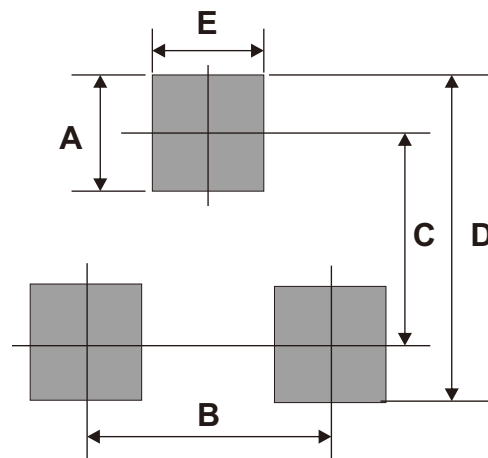
Part Number	Marking Code
CJ3400-HF	R0



Solid dot = Control code

## Suggested PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.80	0.031
B	1.90	0.075
C	2.02	0.080
D	2.82	0.111
E	0.60	0.024



## Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
SOT-23	3,000	7