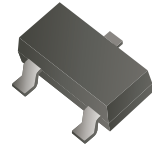


CJ2301-HF

P-Channel
RoHS Device
Halogen Free



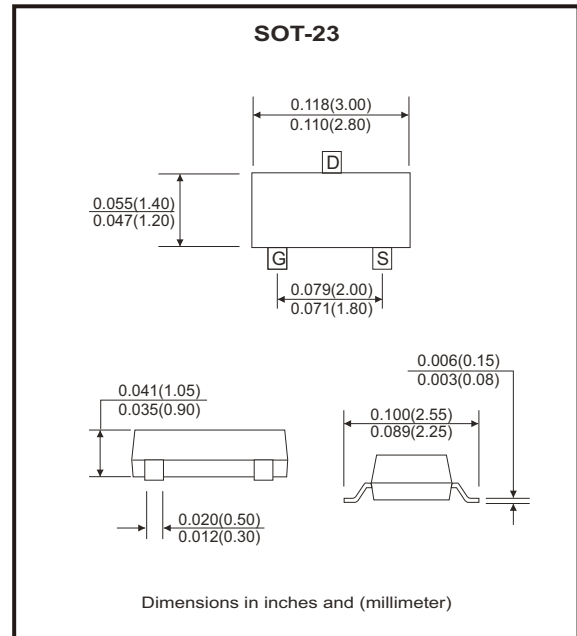
V(BR)DSS	RDS(on)MAX	ID
-20V	112mΩ @ -4.5V	-2.3A
	142mΩ @ -2.5V	

Features

- P-Channel 20-V(D-S) MOSFET
- Trench FET Power MOSFET.
- Load Switch for Portable Devices.
- DC/DC Converter.

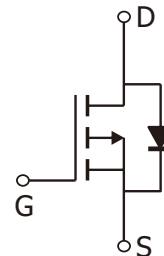
Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Weight: 0.008 grams(approx.).



Circuit diagram

- G : Gate
- S : Source
- D : Drain



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

Parameter	Symbol	Value	Units
Drain-source voltage	V _{DS}	-20	V
Gate-source voltage	V _{GS}	±8	V
Continuous drain current	I _D	-2.3	A
Pulsed drain current	I _{DM}	-10	
Continuous source-drain diode current	I _S	-0.72	
Maximum power dissipation	P _D	400	mW
Thermal resistance from junction to ambient (t<5s)	R _{θJA}	312.5	°C/W
Junction temperature range	T _J	150	°C
Storage temperature range	T _{STG}	-55 to +150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4		-1	
Gate-source leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			-1	μA
Drain-source on-state resistance (Note a)	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -2.8A$		0.090	0.112	Ω
		$V_{GS} = -2.5V, I_D = -2.0A$		0.110	0.142	
Forward transconductance (Note a)	g_{fs}	$V_{DS} = -5V, I_D = -2.8A$		6.5		S
Dynamic (Note b)						
Input capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0V, f = 1MHz$		405		pF
Output capacitance	C_{oss}			75		
Reverse transfer capacitance	C_{rss}			55		
Total gate charge	Q_g	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -3A$		5.5	10	nC
				3.3	6	
Gate-source charge	Q_{gs}	$V_{DS} = -10V, V_{GS} = -2.5V, I_D = -3A$		0.7		
Gate-drain charge	Q_{gd}			1.3		
Gate resistance	R_g	$f = 1MHz$		6.0		Ω
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -10V, R_L = 10\Omega, I_D = -1A, V_{GEN} = -4.5V, R_g = 1\Omega$		11	20	nS
Rise time	t_r			35	60	
Turn-off delay time	$t_{d(off)}$			30	50	
Fall time	t_f			10	20	
Drain-source body diode characteristics						
Continuous source-drain diode current	I_S	$T_C = 25^\circ C$			-1.3	A
Pulse diode forward current (Note a)	I_{SM}				-10	
Body diode voltage	V_{SD}	$I_S = -0.7A$		-0.8	-1.2	V

Notes:

- Pulse test: Pulse width $< 300\mu s$, Duty cycle $\leq 2\%$
- Guaranteed by design, not subject to production testing.

RATING AND CHARACTERISTIC CURVES (CJ2301-HF)

Fig.1 - Output Characteristics

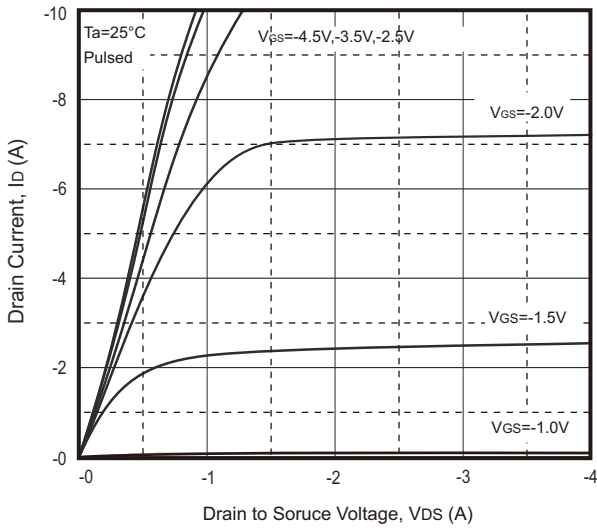


Fig.2 - Transfer Characteristics

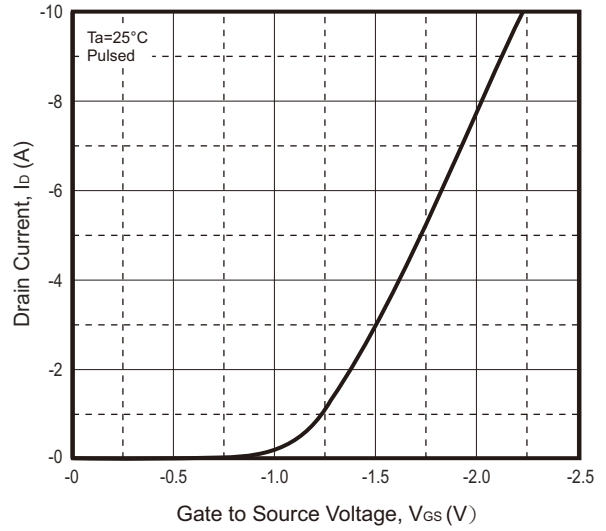


Fig.3 - $R_{DS(ON)}$ — I_D

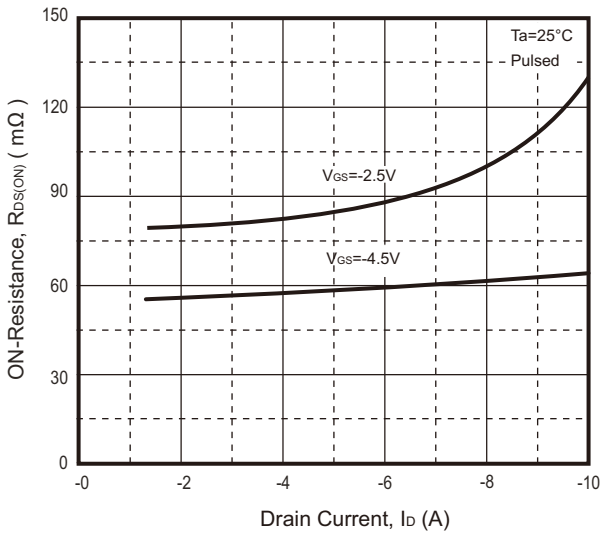


Fig.4 - $R_{DS(ON)}$ — V_{GS}

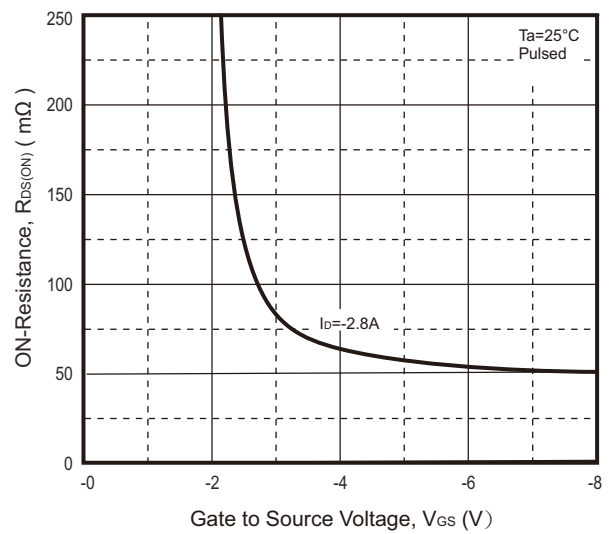
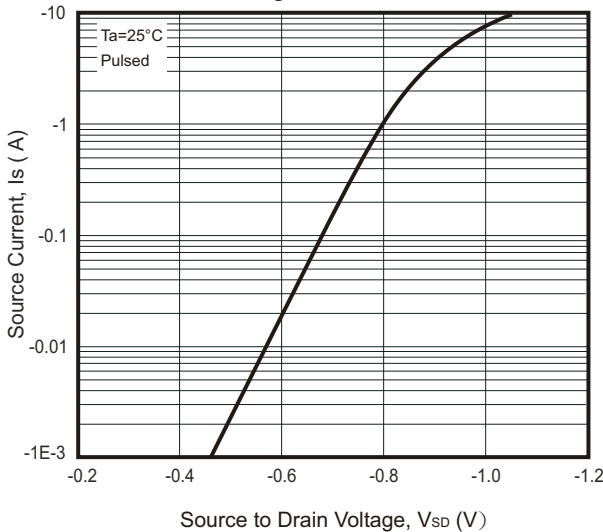
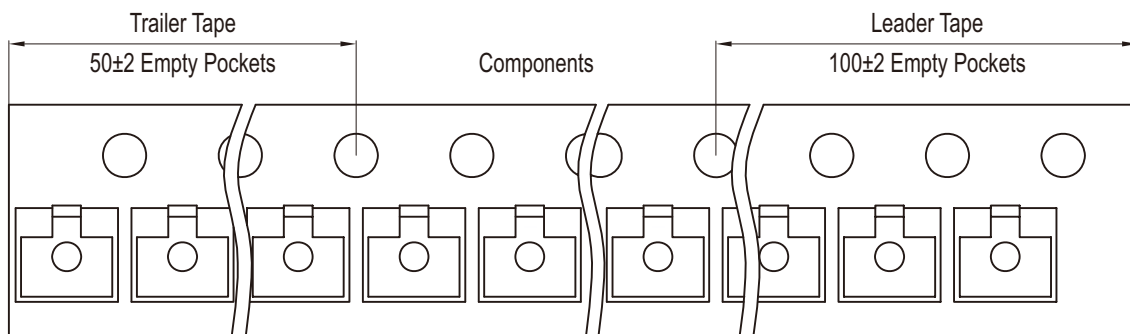
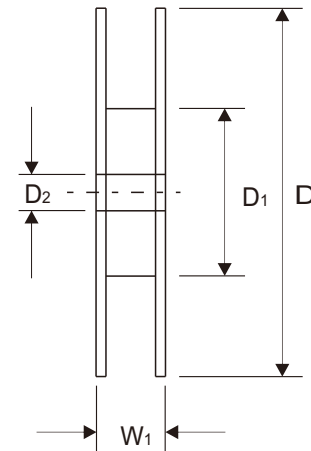
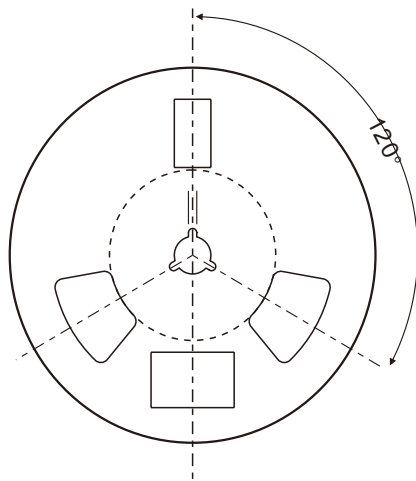
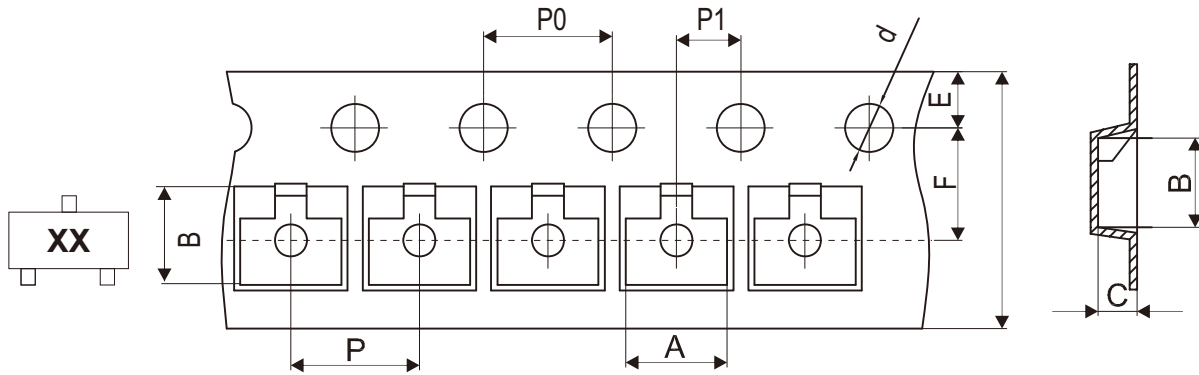


Fig.5 - I_S — V_{SD}



Reel Taping Specification



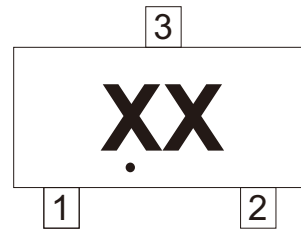
SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

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

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

Marking Code

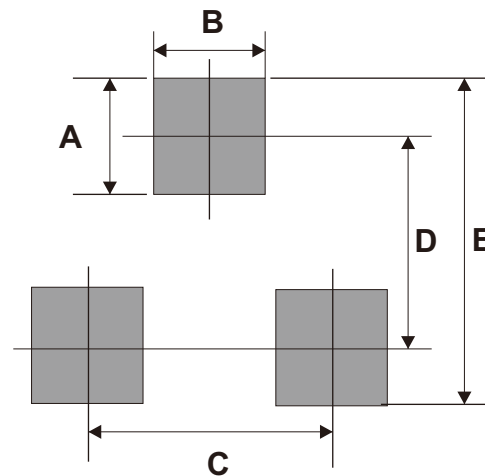
Part Number	Marking Code
CJ2301-HF	S1



xx = Product type marking code

Suggested PAD Layout

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



Standard Packaging

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