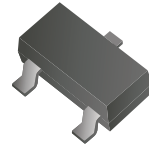


CJ2301-HF

P-Channel
RoHS Device
Halogen Free



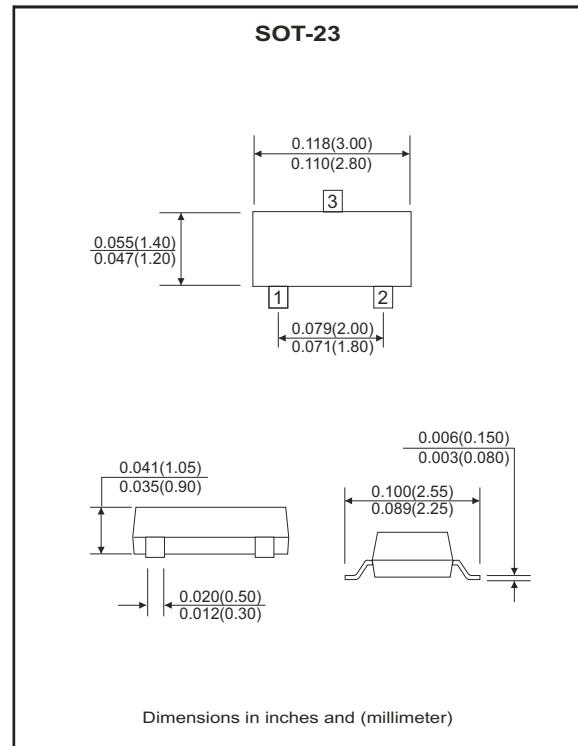
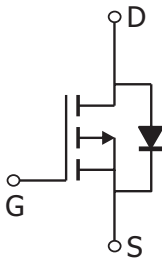
Features

- 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



Maximum Ratings and Electrical Characteristics

(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	350	mW
Thermal resistance from junction to ambient (t _s ≤5s)	R _{θJA}	357	°C/W
Junction temperature range	T _J	150	°C
Storage temperature range	T _{STG}	-55 to +150	°C

Electrical Characteristics (at T_A=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 = -250μA	-20			V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.4		-1	
Gate-source leakage	I _{GSS}	V _{DS} = 0V , V _{GS} = ±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 = 10Ω , I _D = -1A V _{GEN} = -4.5V R _g = 1Ω		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°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 < 300μs, Duty cycle ≤ 2%
- Guaranteed by design, not subject to production testing.

RATING AND CHARACTERISTIC CURVES (CJ2301-HF)

Fig.1 - Output Characteristics

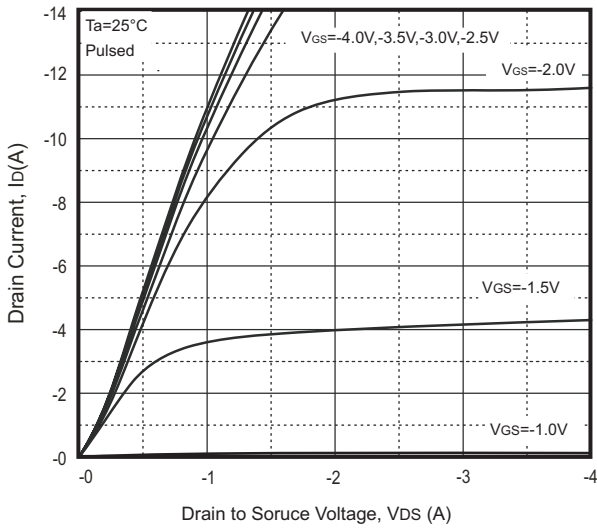


Fig.2 - Transfer Characteristics

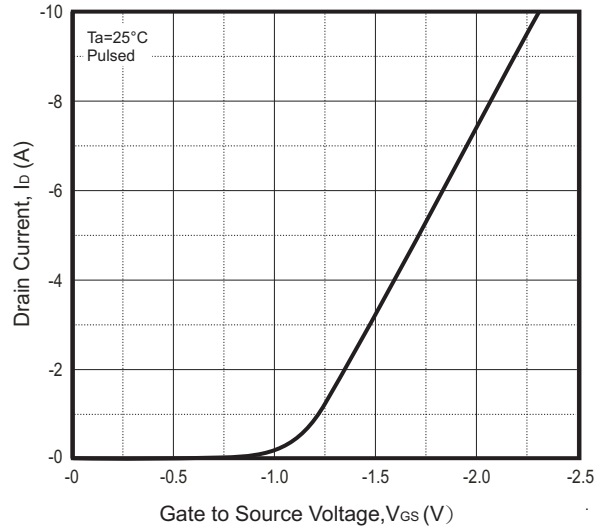


Fig.3 - $R_{DS(ON)} - I_D$

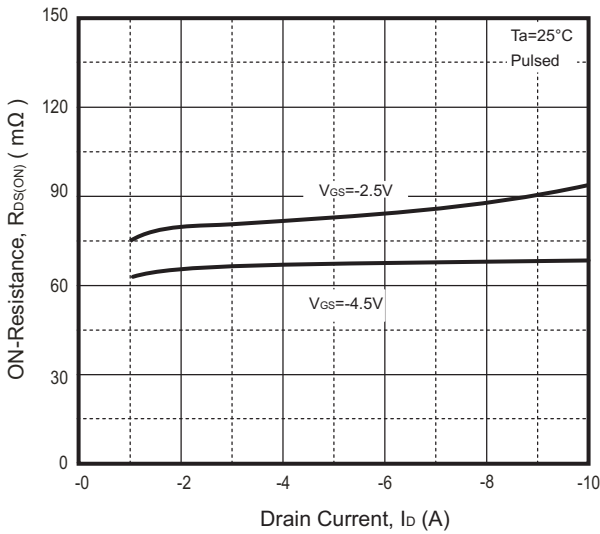


Fig.4 - $R_{DS(ON)} - V_{GS}$

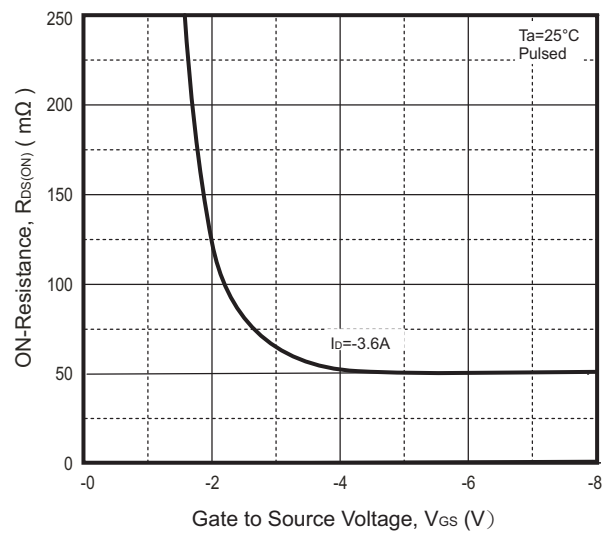
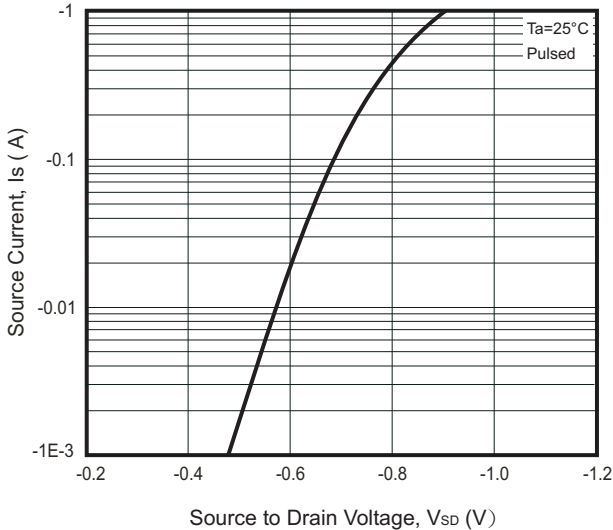
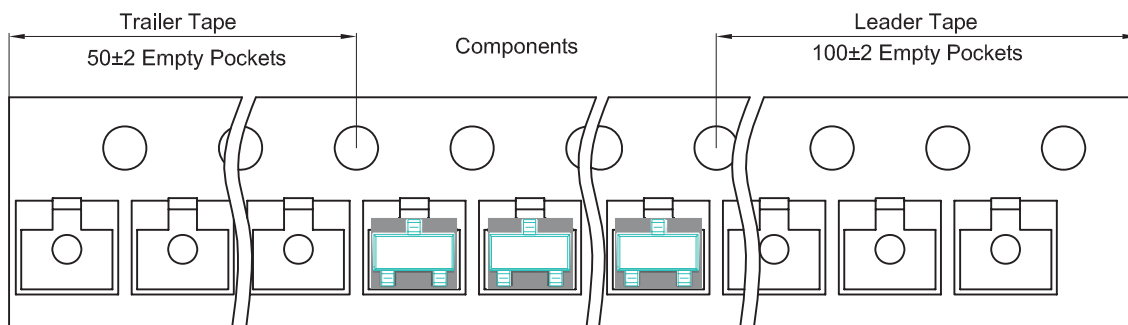
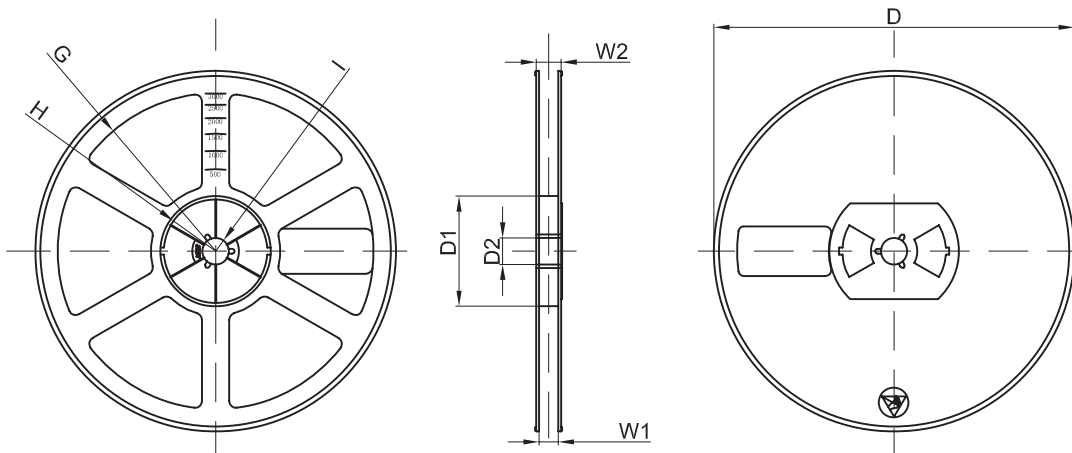
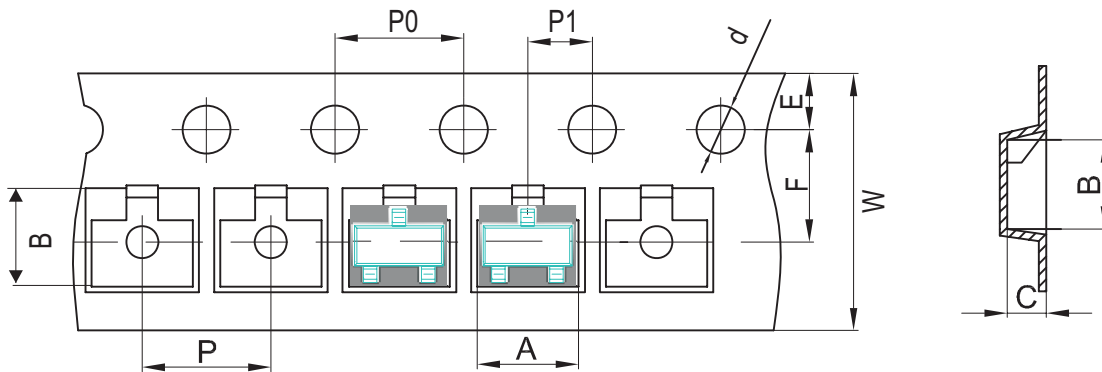


Fig.5 - $I_S - V_{SD}$



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

Reel Taping Specification



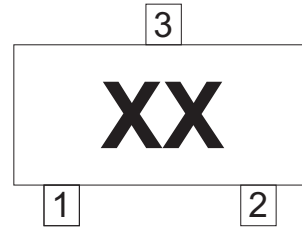
SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178 ± 2.0	54.40 ± 1.0	13.00 ± 1.0
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 ± 0.30 / - 0.10	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.158 ± 0.004	0.158 ± 0.004	0.079 ± 0.004	0.315 ± 0.012 / - 0.004	0.374 ± 0.039

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

Marking Code

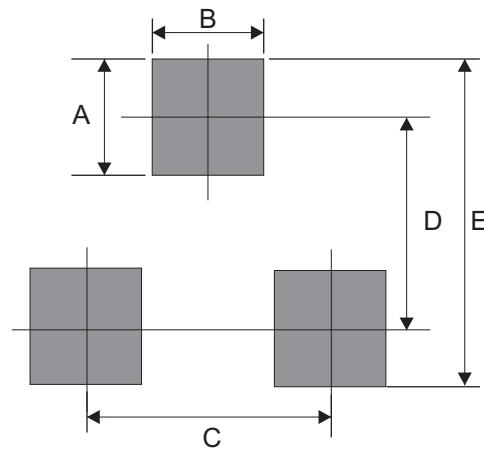
Part Number	Marking Code
CJ2301-HF	S1



xx = Product type marking code

Suggested PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.80	0.031
B	0.80	0.031
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