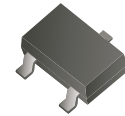


CJ2324-HF

**N-Channel
RoHS Device
Halogen Free**



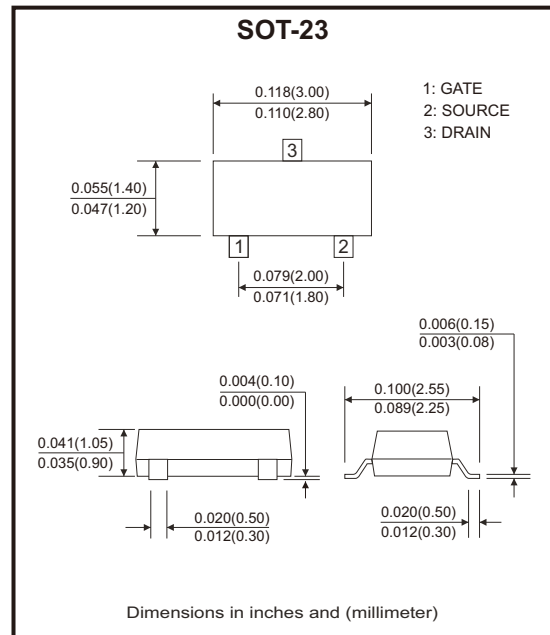
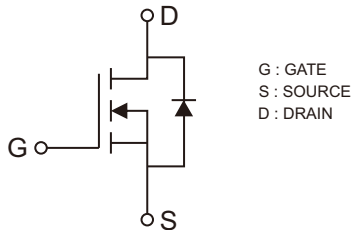
Features

- TrenchFET power MOSFET.
- Low $R_{DS(ON)}$.
- Surface mount package.

Mechanical data

- Case: SOT-23, molded plastic.
- Mounting position: Any.

Circuit Diagram



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

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	100	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current	I_D	2	A
Pulsed drain current (Note 1)	I_{DM}	8	A
Maximum power dissipation	P_D	350	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Operation junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$
Lead temperature for soldering purposes (1/8" from case for 10 s)	T_L	260	$^{\circ}\text{C}$

Notes: 1. Pulse width limited by junction temperature.

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Parameters						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage (Note 1)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.2		2.8	V
Drain-source on-resistance (Note 1)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 1.5A$		195	234	m Ω
		$V_{GS} = 6V, I_D = 1A$		200	267	
		$V_{GS} = 4.5V, I_D = 0.5A$		208	278	
Forward transconductance (Note 1)	g_{FS}	$V_{DS} = 20V, I_D = 1.5A$		2		S
Diode forward voltage (Note 1)	V_{SD}	$I_S = 1.3A, V_{GS} = 0V$			1.2	V
Dynamic Parameters (Note 2)						
Input capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		190		pF
Output capacitance	C_{oss}			22		
Reverse transfer capacitance	C_{rss}			13		
Gate resistance	R_g	$f = 1MHz$	0.3		2.8	Ω
Switching Parameters (Note 2)						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 50V, V_{GEN} = 4.5V$ $R_L = 39\Omega, R_G = 1\Omega, I_D = 1.3A$			45	ns
Turn-on rise time	t_r				39	
Turn-off delay time	$t_{d(off)}$				26	
Turn-off fall time	t_f				20	
Total gate charge	Q_g	$V_{DS} = 50V, V_{GS} = 4.5V, I_D = 1.6A$			5.8	nC
Gate-source charge	Q_{gs}			0.75		
Gate-drain charge	Q_{gd}			1.4		

Notes: 1. Pulse test: Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.
 2. Guaranteed by design, not subject to production testing.

Rating and Characteristic Curves (CJ2324-HF)

Fig.1 - Output Characteristics

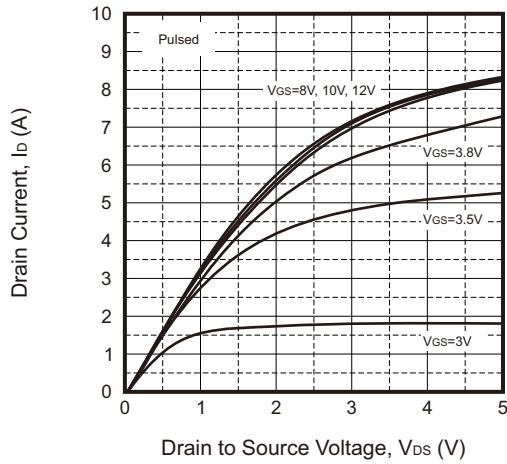


Fig.2 - Transfer Characteristics

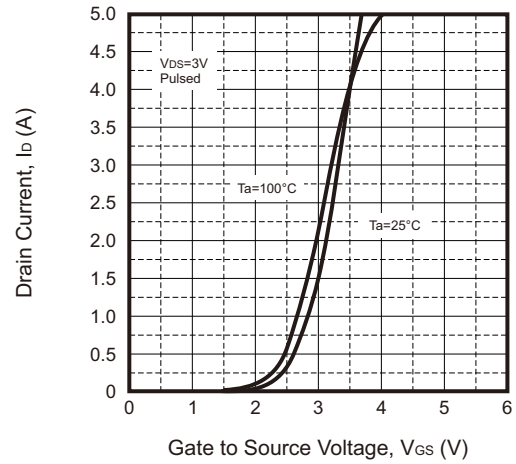


Fig.3 - $R_{DS(on)}$ — I_D

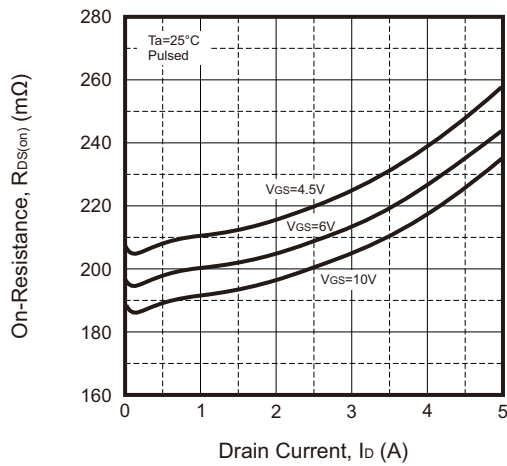


Fig.4 - $R_{DS(on)}$ — V_{GS}

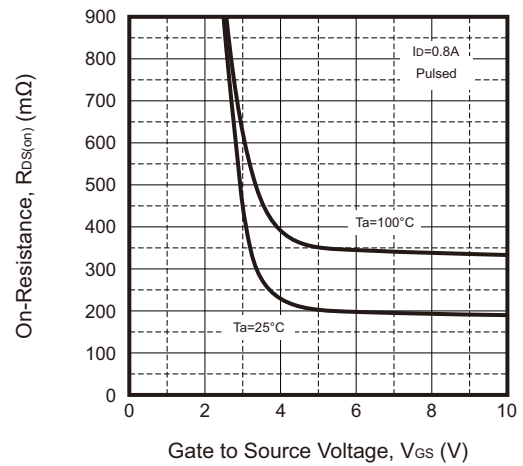


Fig.5 - I_S — V_{SD}

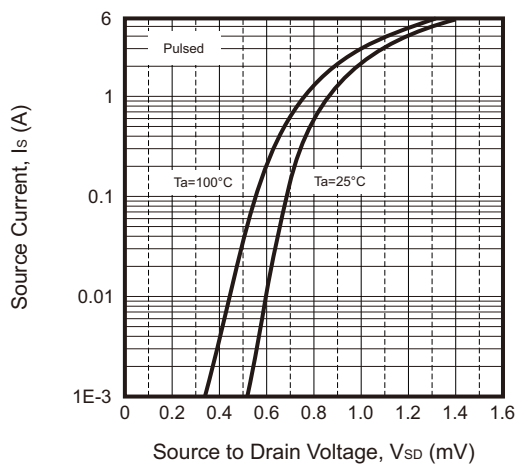
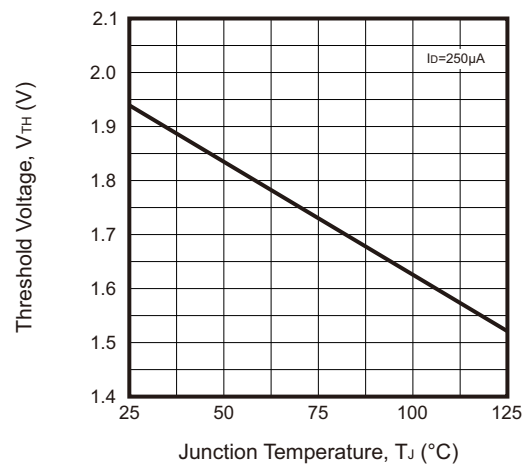


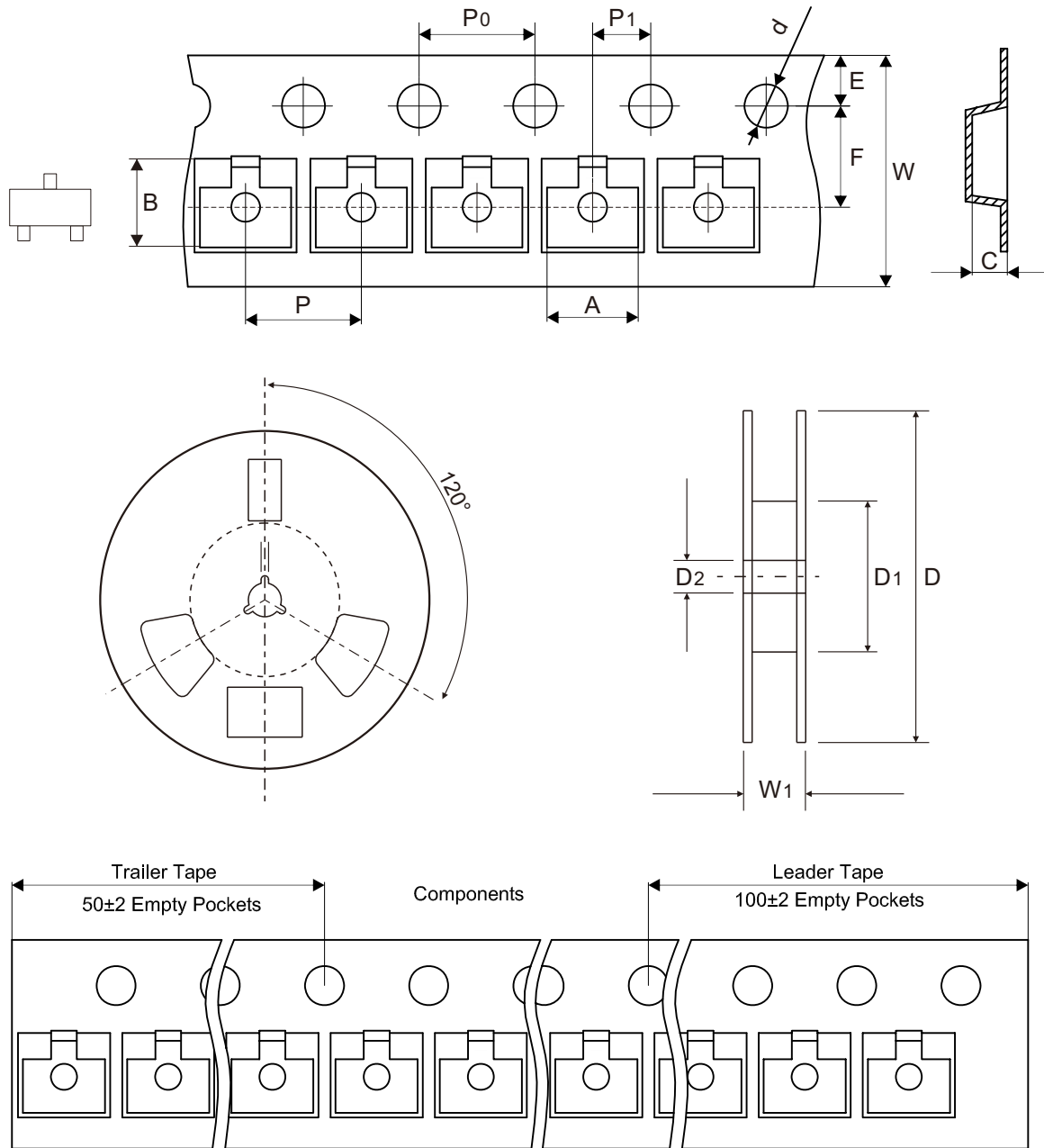
Fig.6 - Threshold Voltage



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

REV:A

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

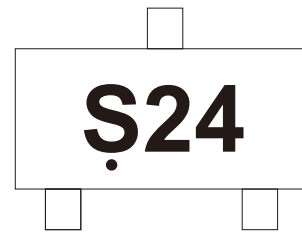
SOT-23	SYMBOL	E	F	P	P ₀	P ₁	W	W ₁
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 + 0.30 - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 + 0.012 - 0.004	0.484 ± 0.039

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

REV:A

Marking Code

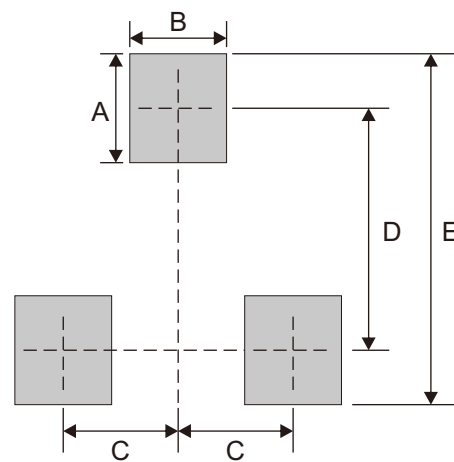
Part Number	Marking Code
CJ2324-HF	S24



Solid dot = Control code

Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	0.95	0.037
D	2.00	0.079
E	2.90	0.114



Note: 1. The pad layout is for reference purposes only.

Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7