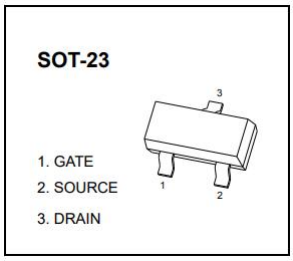
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

AD-CJ3400 Plastic-Encapsulated MOSFET

AD-CJ3400 N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on),\ max}$	I_D
30V	35mΩ @ 10V	5.8A
	40mΩ @ 4.5V	
	52mΩ @ 2.5V	



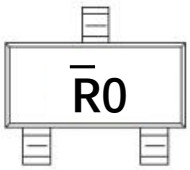
FEATURES

- High dense cell design for extremely low $R_{DS(ON)}$
- Exceptional on-state resistance and maximum DC current capability
- AEC-Q101 qualified

APPLICATIONS

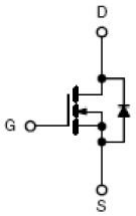
- Load/power switching
- Interfacing switching

MARKING



$\bar{R}0$ = Device code

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (T_j = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	30	V
Gate-source voltage	V_{GS}	±12	V
Continuous drain current	I_D	5.8	A
Pulsed drain current	I_{DM} 1)	30	A
Power dissipation	P_D 2)	2	W
Thermal resistance from junction to ambient	$R_{\theta JA}$ 2)	62.5	°C/W
Power dissipation	P_D 3)	350	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$ 3)	357	°C/W
Operating junction and storage temperature range	T_j, T_{stg}	-55 ~ 150	°C

ELECTRICAL CHARACTERISTICS (T_j = 25°C unless otherwise specified)

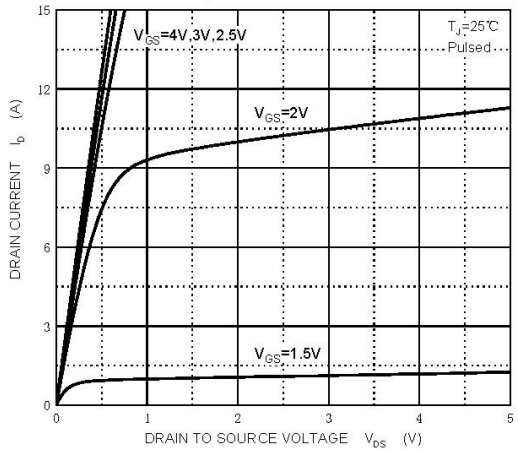
Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Static characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} = 24V, V_{GS} = 0V, T_j = 25°C	-	-	1	μA
		V_{DS} = 24V, V_{GS} = 0V, T_j = 125°C			1	mA
Gate-source leakage current	I_{GSS}	V_{GS} = ±12V, V_{DS} = 0V	-	-	±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.7	0.9	1.4	V
Forward transconductance	g_{fs} 4)	V_{DS} = 5V, I_D = 5A	8	-	-	S
Drain-source on-state resistance	$R_{DS(on)}$ 4)	V_{GS} = 10V, I_D = 5.8A	-	25	35	mΩ
		V_{GS} = 4.5V, I_D = 5A	-	27	40	
		V_{GS} = 2.5V, I_D = 4A		33	52	
Dynamic characteristics 5)						
Total gate charge	Q_g	V_{DS} = 10V, V_{GS} = 6V, I_D = 5A	-	9.5	-	nC
Gate-source charge	Q_{gs}		-	1.5	-	
Gate-drain charge	Q_{gd}		-	3	-	
Gate resistance	Rg	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz	-	3.6	-	Ω
Input capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz	-	820	1050	pF
Output capacitance	C_{oss}		-	99	-	
Reverse transfer capacitance	C_{rss}		-	77	-	
Switching parameters 5)						
Turn-on delay time	$t_{d(on)}$	V_{GS} = 10V, R_{GEN} = 3Ω, V_{DS} = 15V, R_L = 2.7Ω	-	3.3	5	ns
Turn-off delay time	$t_{d(off)}$		-	4.8	7	
Rise time	t_r		-	26	40	
Fall time	t_f		-	4	6	
Diode characteristics						
Drain-source diode forward voltage	V_{SD} 4)	I_S = 1A, V_{GS} = 0V	-	-	1	V
Continuous drain-source diode forward current	I_S		-	-	5.8	A
Pulsed drain-source diode	I_{SM} 1)		-	-	30	A

forward current						

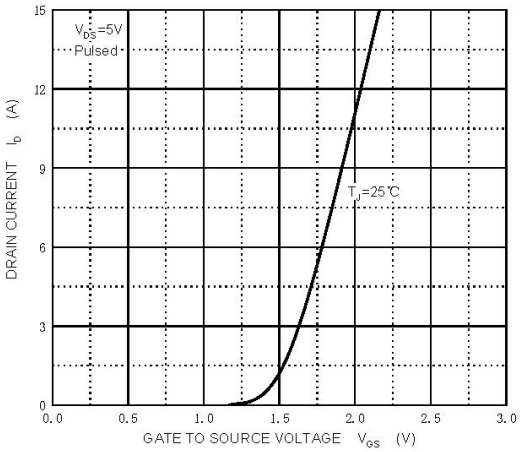
1) Repetitive rating: Pulse width limited by maximum junction temperature.
2) Measured with the device mounted on 1 inch^2 FR-4 board with double-sided 2oz copper, in a still air environment with Ta = 25℃.
3) Measured with the device mounted on 1 inch^2 FR-4 board with minimum pad and no copper, in a still air environment with Ta = 25℃.
4) Pulse test: Pulse width ≤ 300μs, duty cycle ≤ 2%.
5) Guaranteed by design, not subject to production.

TYPICAL CHARACTERISTICS

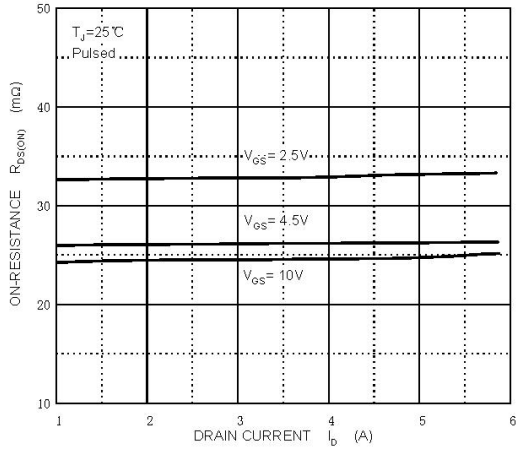
Output Characteristics



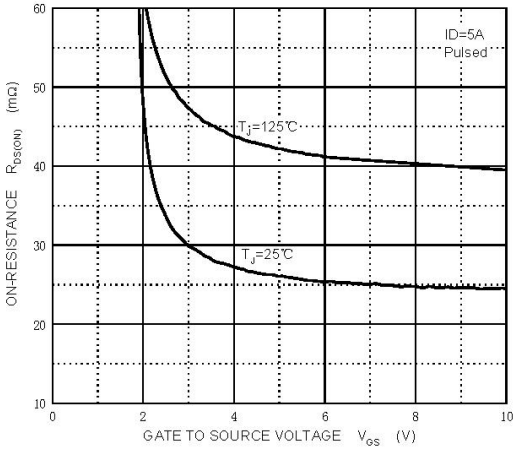
Transfer Characteristics



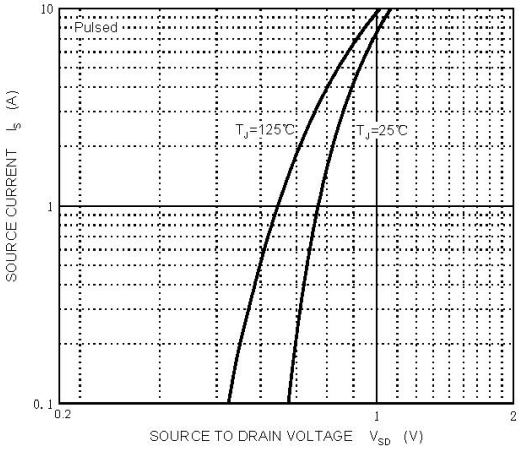
$R_{DS(ON)}$ —— I_D



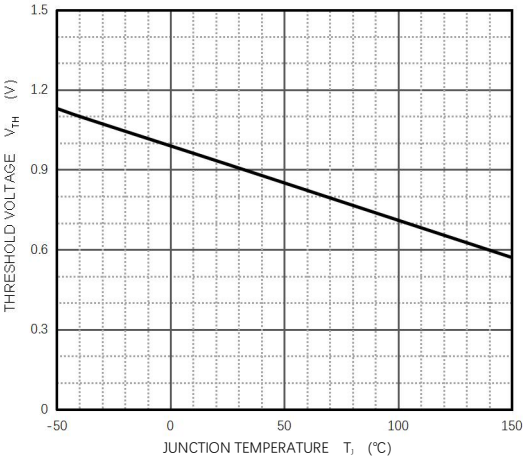
$R_{DS(ON)}$—— V_{GS}



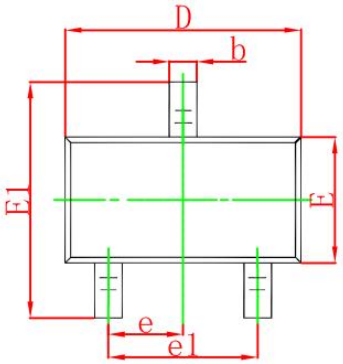
I_S —— V_{SD}

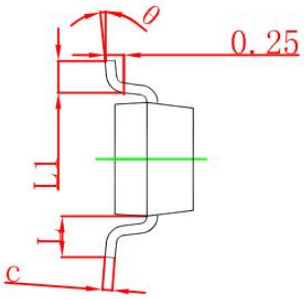


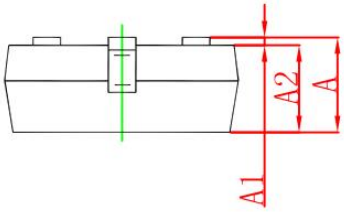
Threshold Voltage



SOT-23 PACKAGE OUTLINE DIMENSIONS

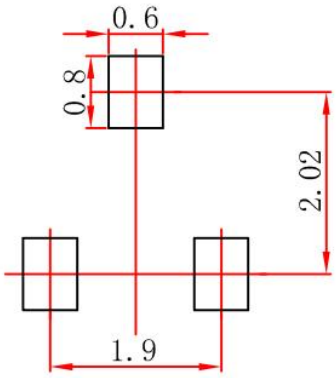






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.132	0.202	0.005	0.008
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e1	1.800	2.000	0.071	0.079
L	0.55REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 SUGGESTED PAD LAYOUT

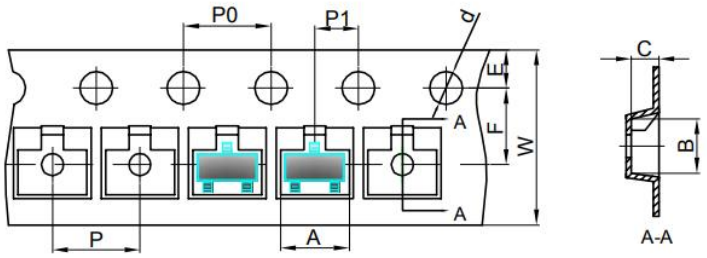


Note:

1. Controlling dimension in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purpose only.

SOT-23 TAPE AND REEL

SOT-23 Embossed Carrier Tape

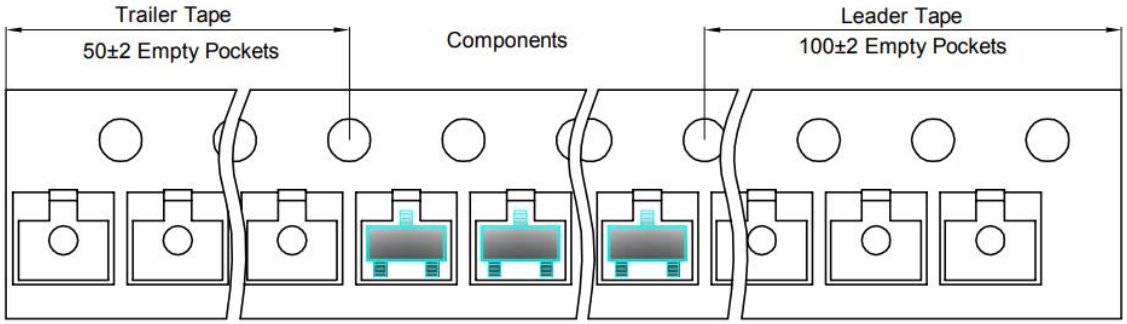


Packaging Description:

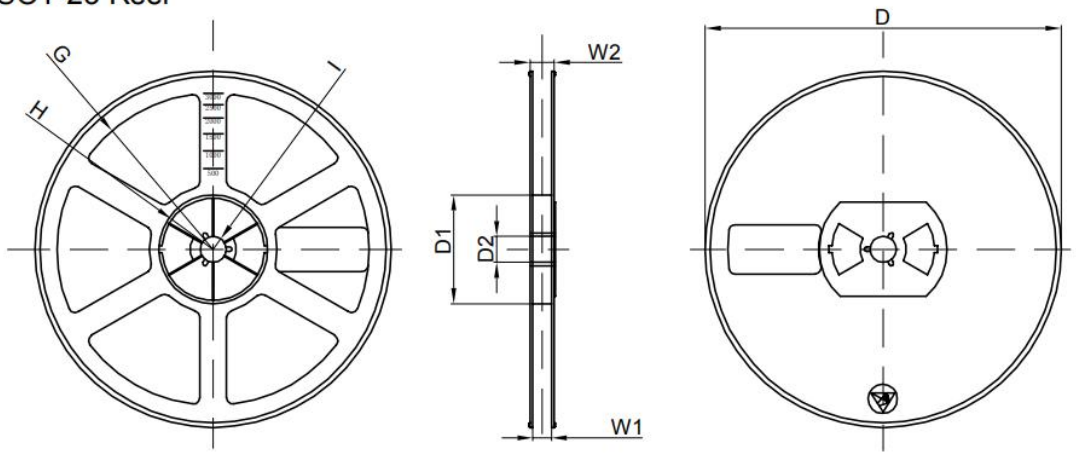
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	

PUBLISHED BY

JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.
13th Floor, C Block, Tengfei Building, Yan Chuang Yuan, Nanjing Jiangbei New Area, China

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