

Description

The CJ2102 is N-Channel enhancement MOS Field Effect Transistor. Uses advanced trench technology and design to provide excellent $R_{DS(on)}$, with low gate charge. Device is suitable for use in DC-DC conversion, power switch and charging circuit.

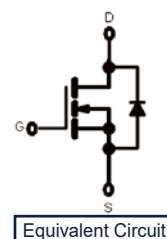
General Features

- TrenchFET Power MOSFET



Applications

- Load Switch for Portable Devices
- DC/DC Converter



Ordering information

Product ID	Pack	Naming rule	Marking	Qty(PCS)
CJ2102	SOT-323	CJ2102 ↓ 产品名称 product name	TS2	3000

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

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source voltage	20	V
V_{GS}	Gate-Source Voltage	± 8	V
I_D	Drain Current-Continuous	2.1	A
I_S	Continuous Source-Drain Current(Diode Conduction)	0.6	A
P_D	Power Dissipation	0.2	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient ($t \leq 5s$)	625	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	$-55 \sim +150$	$^{\circ}\text{C}$

Electrical Characteristics (T_A=25℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =10μA	20	---	---	V
V _{GS(th)}	Gate-Threshold Voltage	V _{GS} =V _{DS} , I _D =50μA	0.65	0.75	1.2	V
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±8V , V _{DS} =0V	---	---	±100	nA
I _{DSS}	Drain-Source Leakage Current	V _{DS} =20V,V _{GS} =0V	---	---	1	μA
R _{DS(ON)}	Drain-source on-resistance ¹	V _{GS} =4.5V, I _D =3.6A	---	35	68	mΩ
		V _{GS} =2.5V,I _D =3.1A	---	43	115	
g _{fs}	Forward Transconductance ¹	V _{DS} =5V , I _D =3.6A	---	7.2	---	S
V _{SD}	Diode Forward Voltage	I _S =0.94A,V _{GS} =0V	---	0.76	1.2	V
Dynamic Characteristics						
Q _g	Total gate charge	V _{DS} =10V,V _{GS} =4.5V,I _D =3.6A	---	4.0	10	nC
Q _{gs}	Gate-source charge		---	0.65	---	
Q _{gd}	Gate-drain charge		---	1.5	---	
C _{iss}	Input Capacitance ²	V _{DS} =10V , V _{GS} =0V , f=1MHz	---	330	---	pF
C _{oss}	Output Capacitance ²		---	60	---	
C _{rss}	Reverse Transfer Capacitance ²		---	50	---	
Switching Characteristics ²						
T _{d(on)}	Turn-On Delay Time	V _{DD} =10V,R _L =5.5Ω,I _D ≈3.6A, V _{GEN} =4.5V,R _g =6Ω	---	7	15	ns
T _r	Rise Time		---	55	80	
T _{d(off)}	Turn-Off Delay Time		---	16	60	
T _f	Fall Time		---	10	25	

Notes :

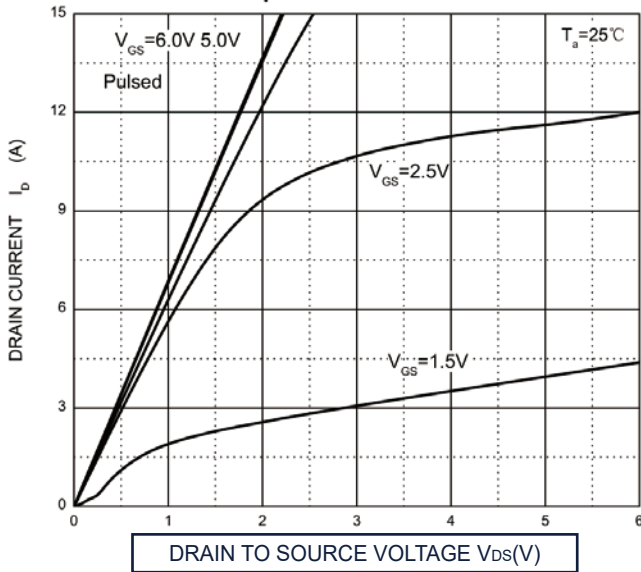
1.Pulse Test : Pulse width≤300μs, duty cycle ≤2%.

2.These parameters have no way to verify.

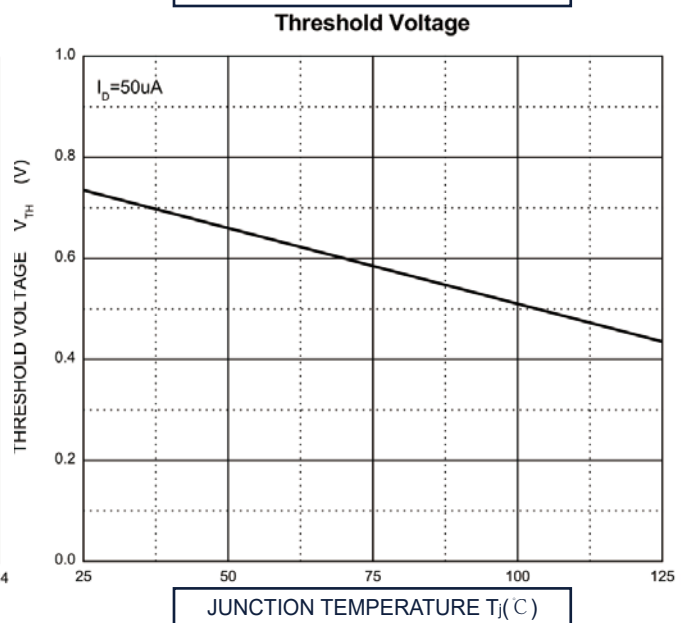
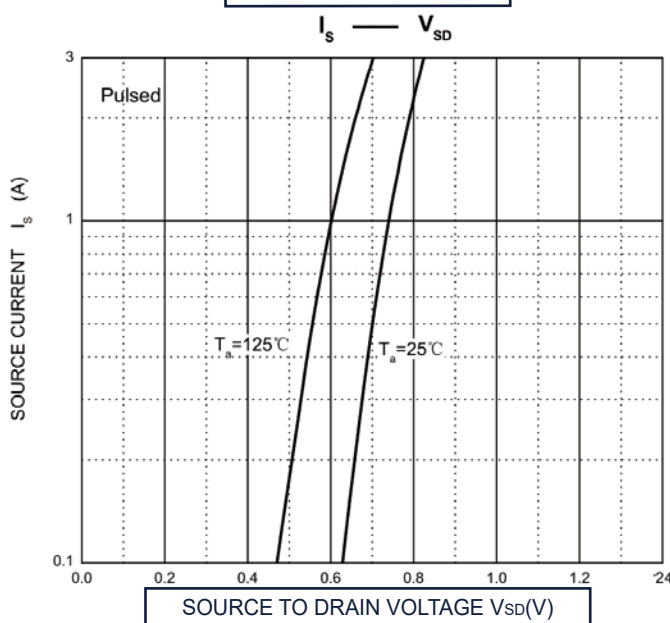
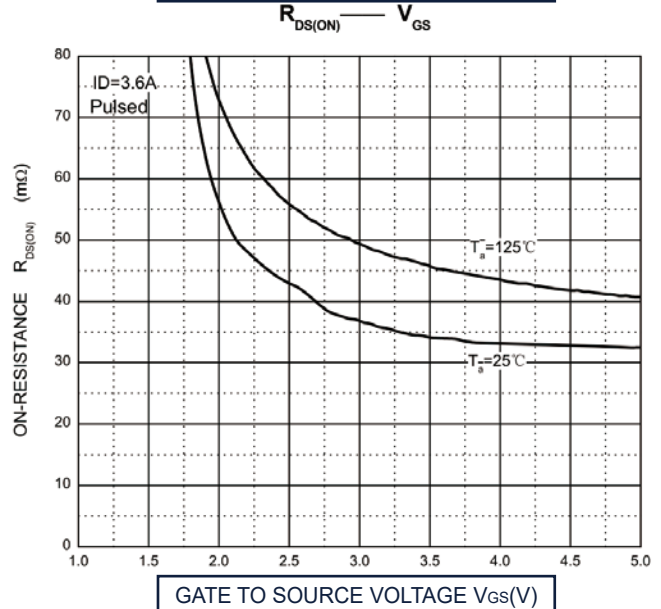
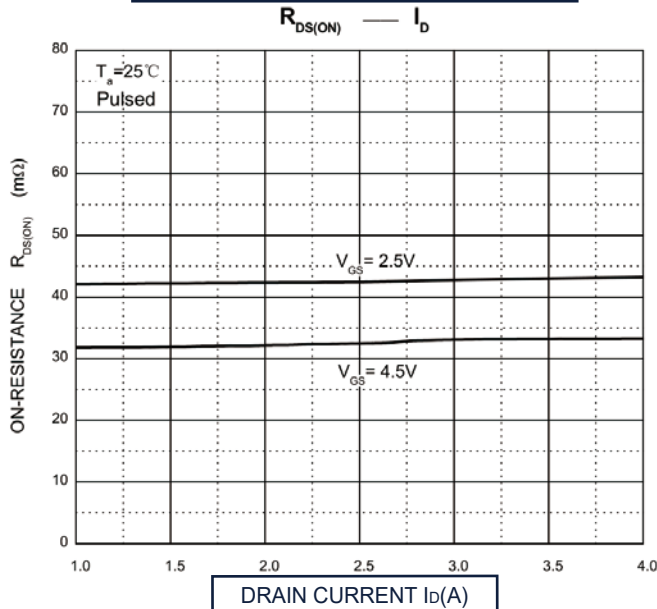
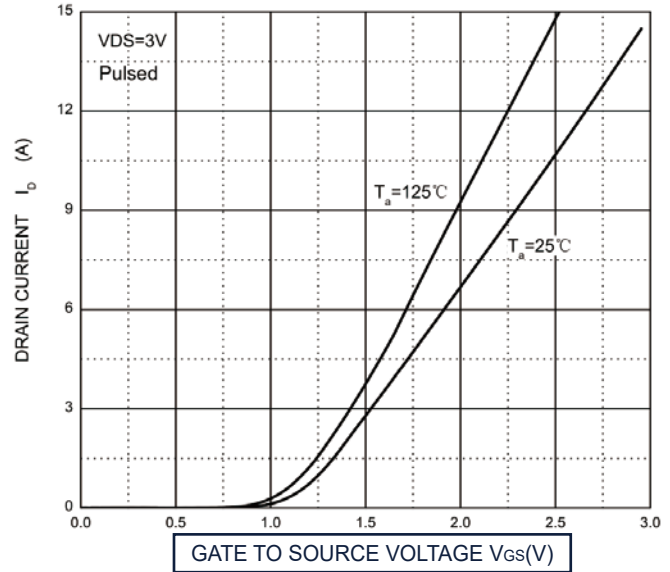


Typical Characteristics

Output Characteristics

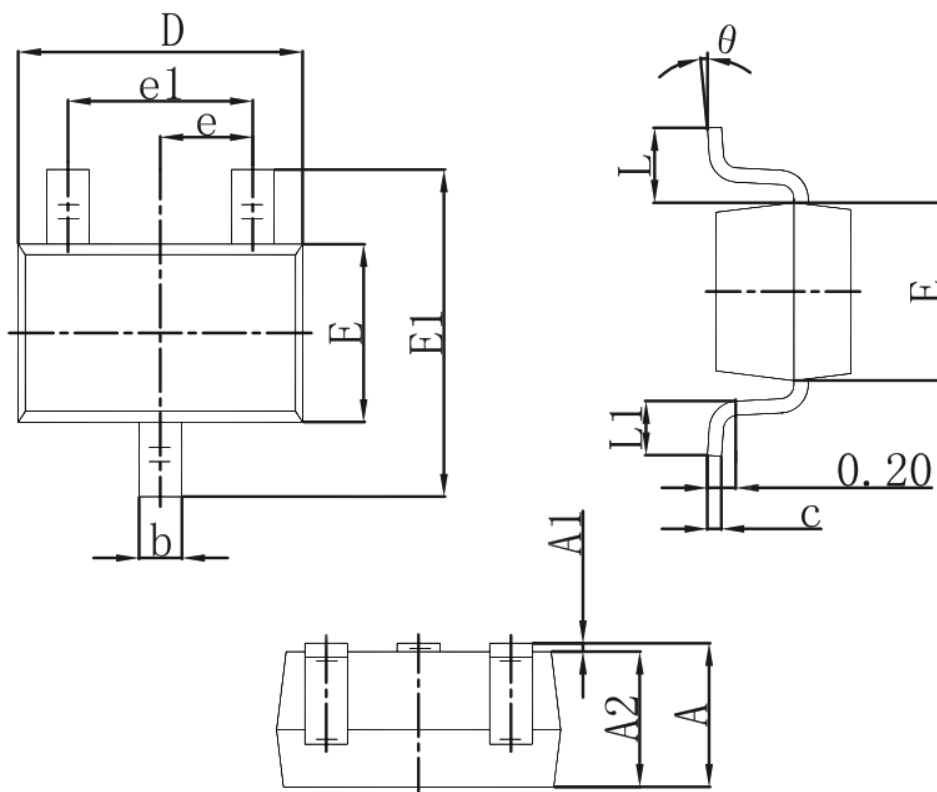


Transfer Characteristics





SOT-323 Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	1.350	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°