

60V N-Channel MOSFET

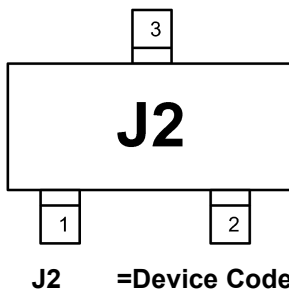
FEATURE

- We declare that the material of product compliance with RoHS requirements and Halogen Free
- Low threshold voltage, makes it ideal for low voltage applications
- ESD Protected
- $R_{DS(ON)} \leq 3\Omega$ @ $V_{GS} = 10V$
 $R_{DS(ON)} \leq 4\Omega$ @ $V_{GS} = 4.5V$

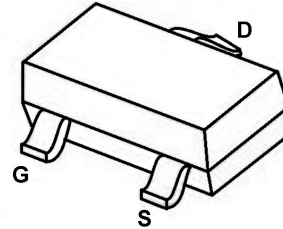
APPLICATION

- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers, Display, Memories, Transistors, etc.
- Battery Operated Systems
- Solid-State Relays

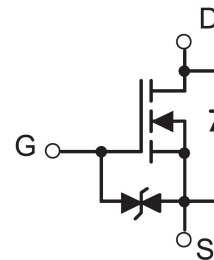
MARKING



SOT-323



CIRCUIT DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.22	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

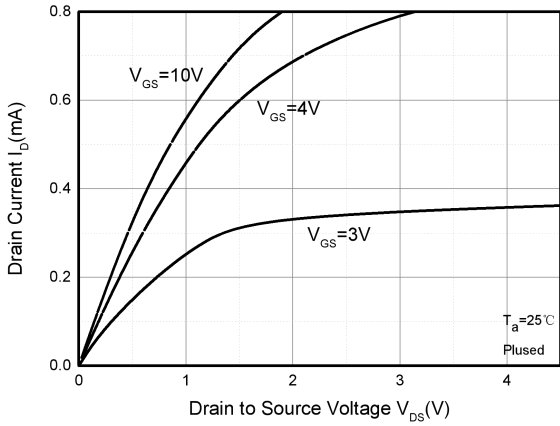
ELECTRICAL CHARACTERISTICS (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	60	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =48V, V _{GS} = 0V	-	-	1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V	-	-	±5	μA
Gate threshold voltage ¹⁾	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	0.8	1	1.45	V
Drain-source on-resistance ¹⁾	R _{DS(on)}	V _{GS} =10V, I _D =500mA	-	1.5	3	Ω
Dynamic characteristics²⁾						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	27	-	pF
Output Capacitance	C _{oss}		-	13	-	
Reverse Transfer Capacitance	C _{rss}		-	6	-	
Switching Characteristics¹⁾²⁾						
Turn-on delay time	t _{d(on)}	V _{DD} =30V, I _D =0.29A, V _{GS} =10V, R _G =6Ω	-	-	5	nS
Rise time	t _r		-	-	18	
Turn-off delay time	t _{d(off)}		-	-	36	
Fall tim	t _f		-	-	14	
Source-Drain Diode characteristics						
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S =500mA	0.5	-	1.4	V

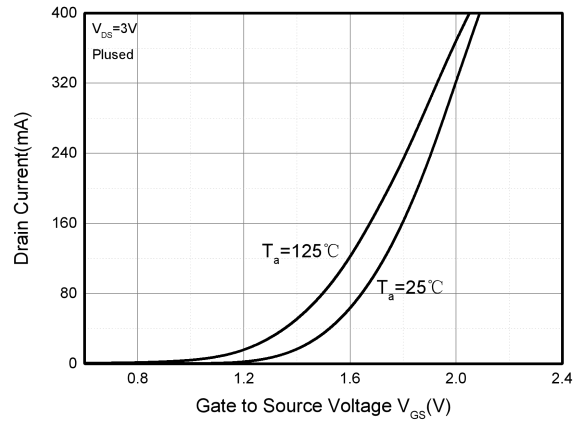
Notes:

- 1) Pulse Test: Pulse Width ≤300μs, Duty Cycle ≤2%.
- 2) These parameters have no way to verify.

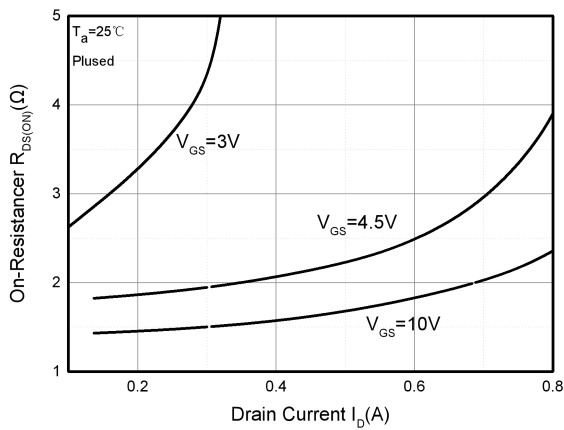
TYPICAL CHARACTERISTIC



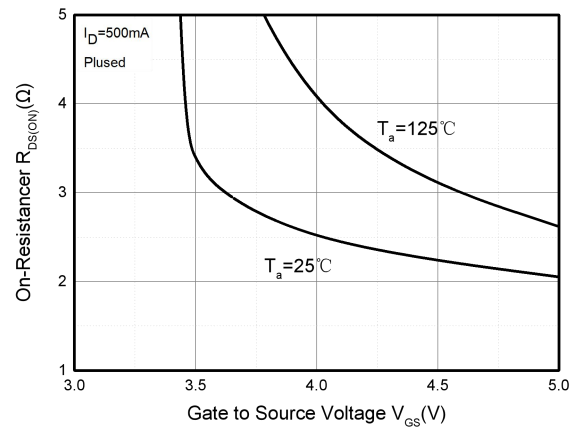
Output Characteristics



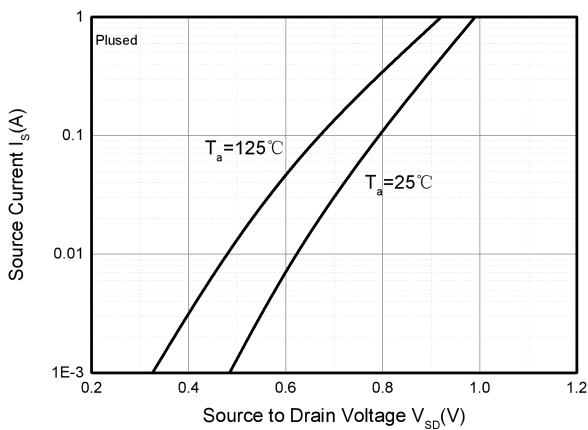
Transfer Characteristics



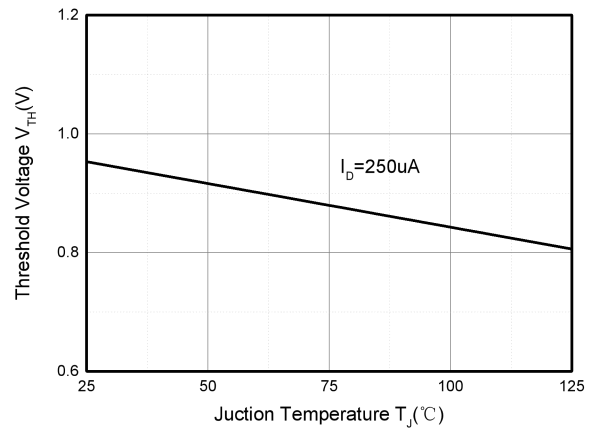
RDS(ON)—I_D



RDS(ON)—V_{GS}

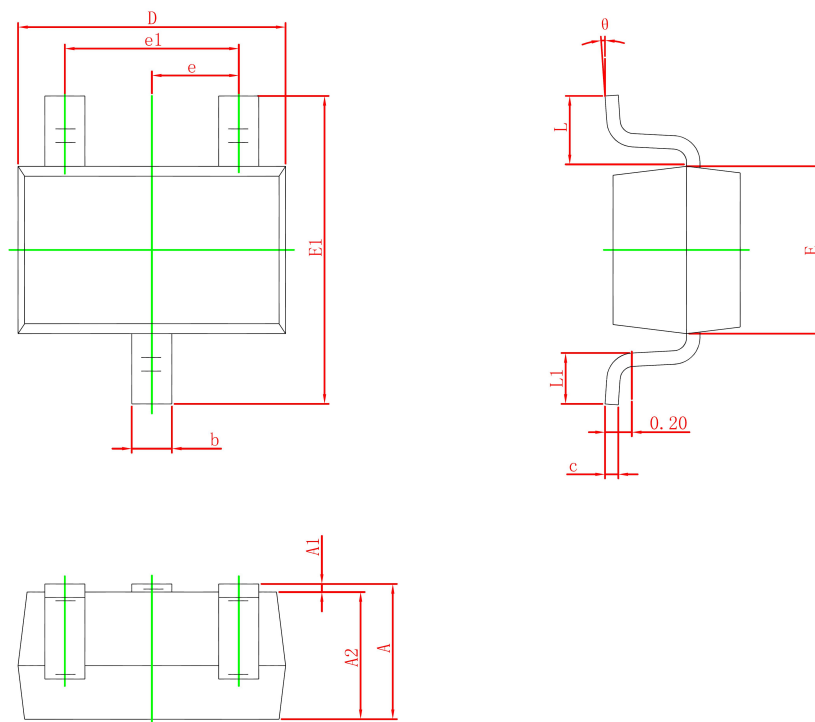


I_S—V_{SD}



Threshold Voltage

SOT-323 PACKAGE INFORMATION



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	2.150	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
theta	0°	8°	0°	8°