

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	$2\Omega@10V$	0.22A
	$2.5\Omega@4.5V$	

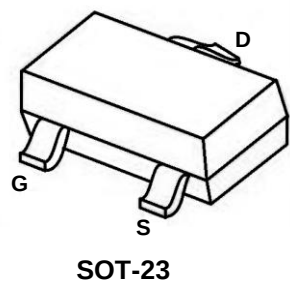
Feature

- 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

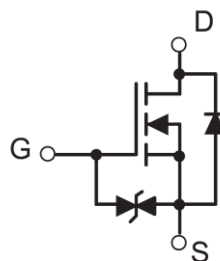
Application

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

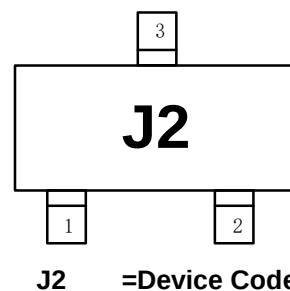
Package



Circuit diagram



Marking



**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	0.7	1	1.45	V
Drain-source on-resistance ¹⁾	R _{DS(on)}	V _{GS} =10V, I _D =500mA		2	5	Ω
		V _{GS} =4.5V, I _D =200mA		2.5	8	
Dynamic characteristics ²⁾						
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 Characteristics ¹⁾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

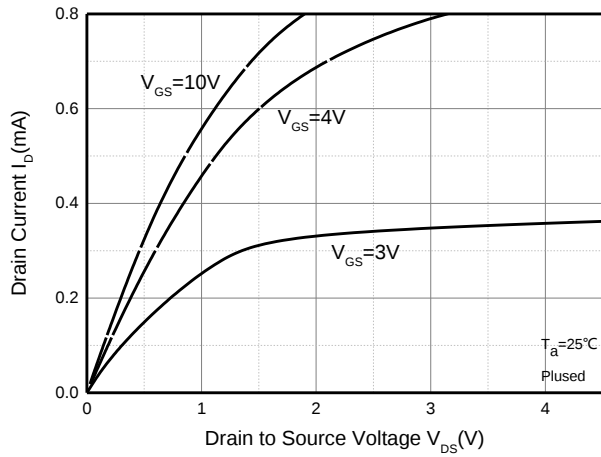
Notes:

1) Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

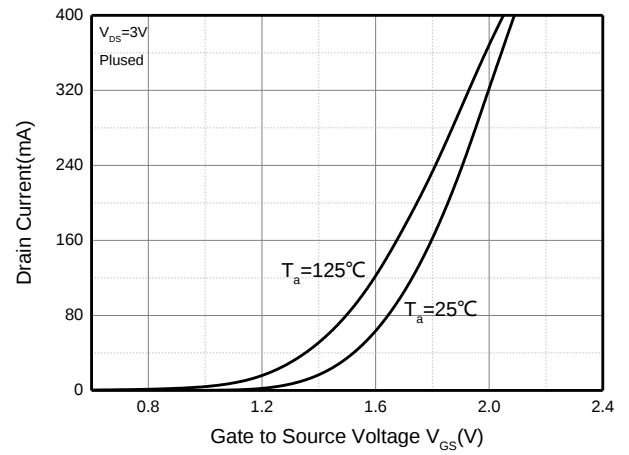


Typical Characteristics

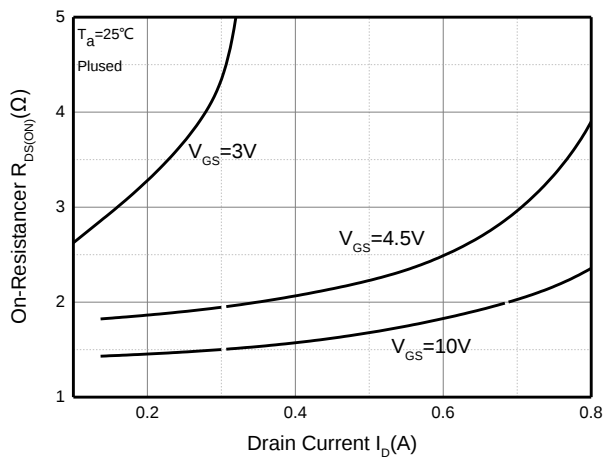
Output Characteristics



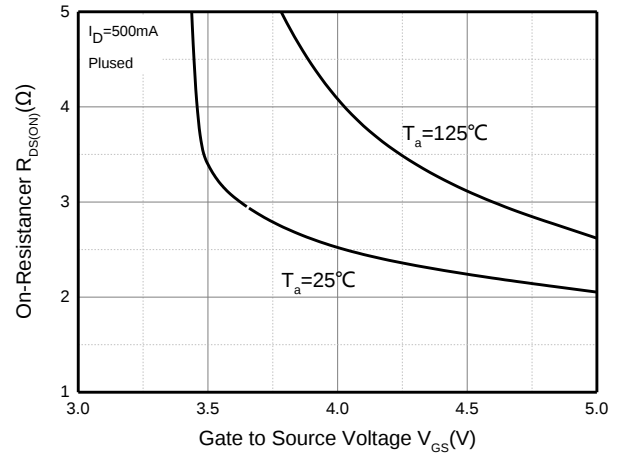
Transfer Characteristics



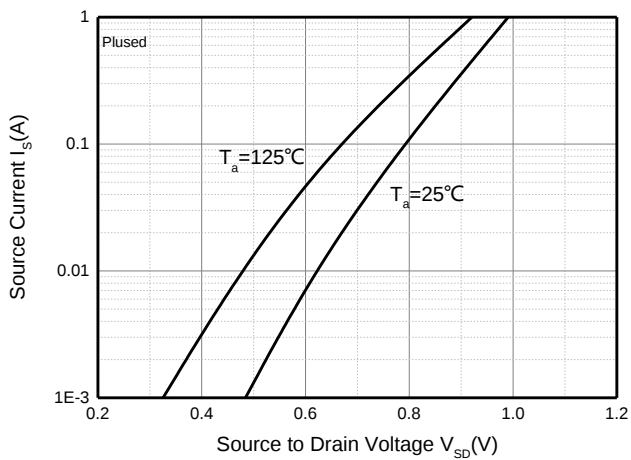
R_{DS(ON)}—I_D



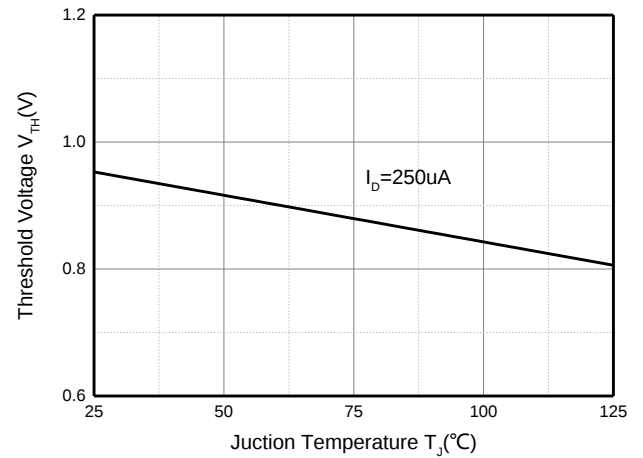
R_{DS(ON)}—V_{GS}



I_S—V_{SD}

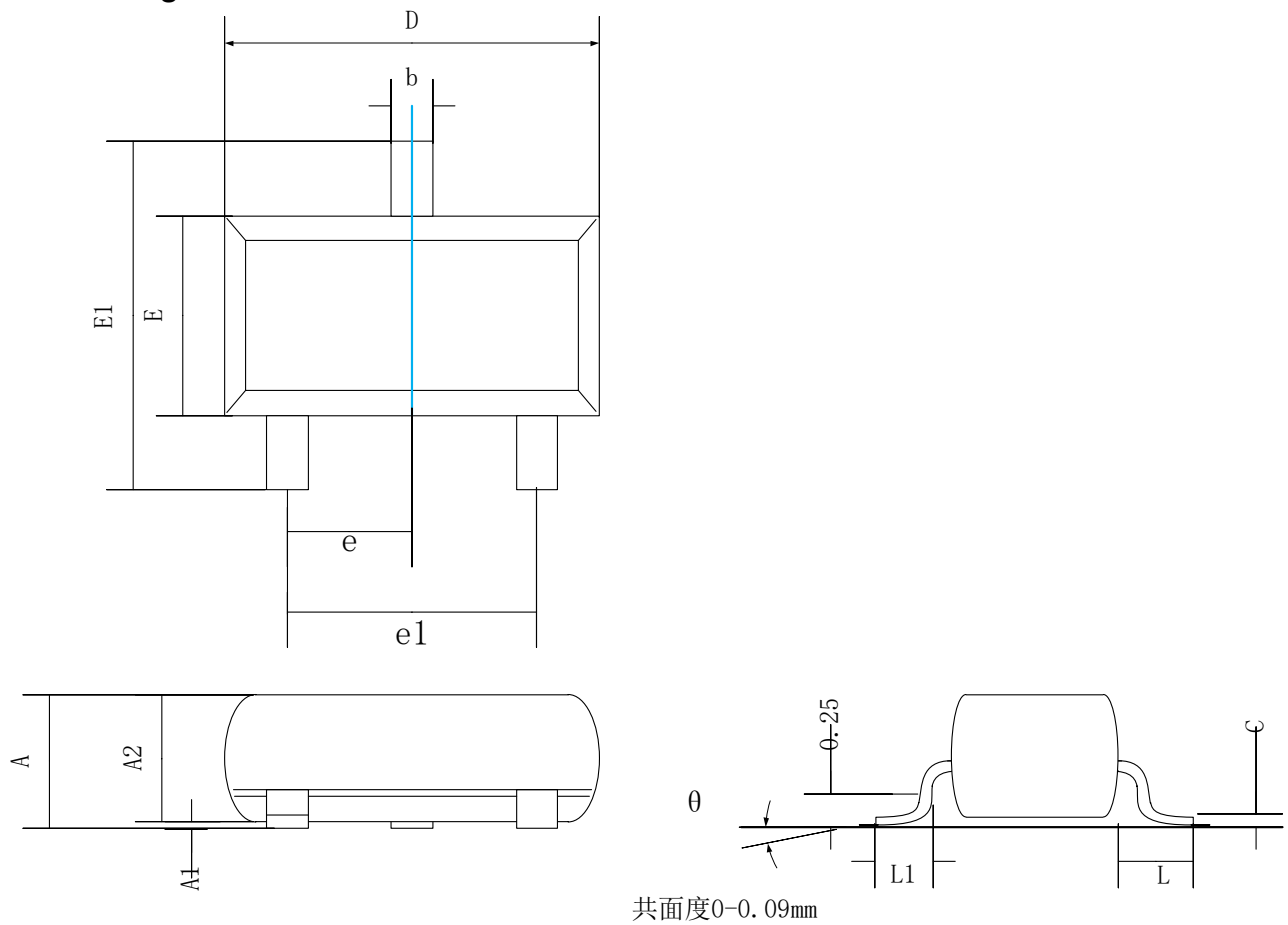


Threshold Voltage





SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
θ	0°	8°