FS1012ET

N-Channel SMD MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	0.38Ω@4.5V	0.7A
	0.62Ω@2.5V	

Feature

- High density cell design for ultra low on-resistance
- High-Side Switching
- Rugged and reliable
- ESD protection

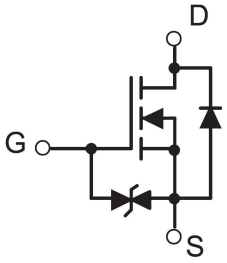
Application

- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers
- Drivers, Relays, Solenoid, Lamps, Hammers, Displays, Memories

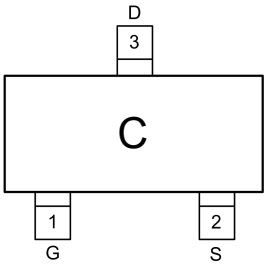
Package

SOT-523

Circuit diagram



Marking



Absolute maximum ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±8	V
Continuous Drain Current	I_D	0.7	A
Pulsed Drain Current	I_{DM}	2.8	A
Power Dissipation	P_D	0.3	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	510	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

Electrical characteristics (T_A=25 ºC, unless otherwise noted)

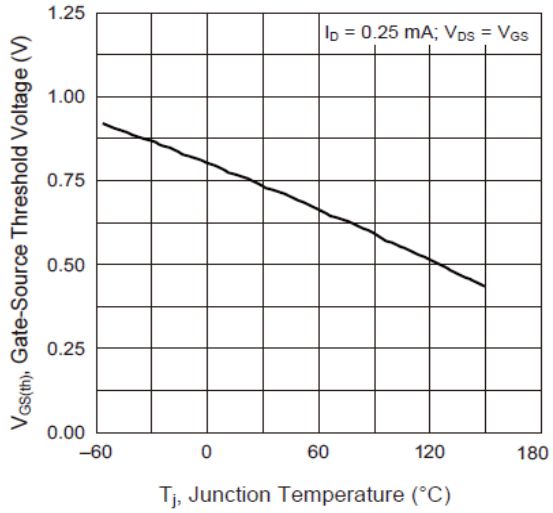
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±8V, V_{DS} = 0V			±5	μA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.45		1.2	V
Drain-source on-resistance[1]	$R_{DS(on)}$	V_{GS} =4.5V, I_D =0.5A			380	mΩ
		V_{GS} =2.5V, I_D =0.4A			620	
Dynamic characteristics[2]						
Input Capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz		78		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			7		
Turn-on delay time	$t_{d(on)}$	V_{DD}=10V,V_{GS}=4.5V, I_D =0.3A,R_{GEN}=3.3Ω		8		nS
Turn-on rise time	t_r			4		
Turn-off delay time	$t_{d(off)}$			160		
Turn-off fall time	t_f			28		
Source-Drain Diode characteristics						
Diode Forward voltage	V_{DS}	V_{GS} =0V, I_S=0.3A			1.2	V

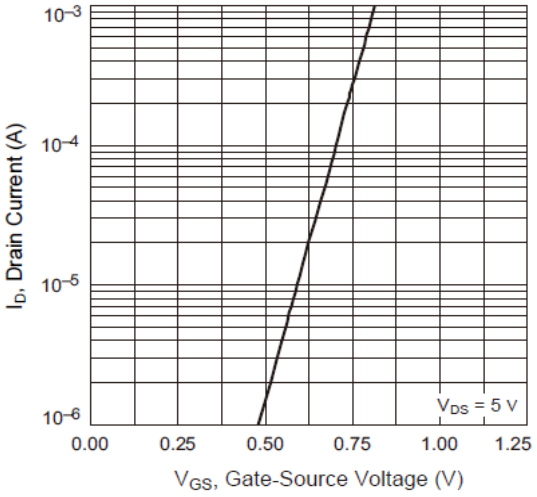
Notes:

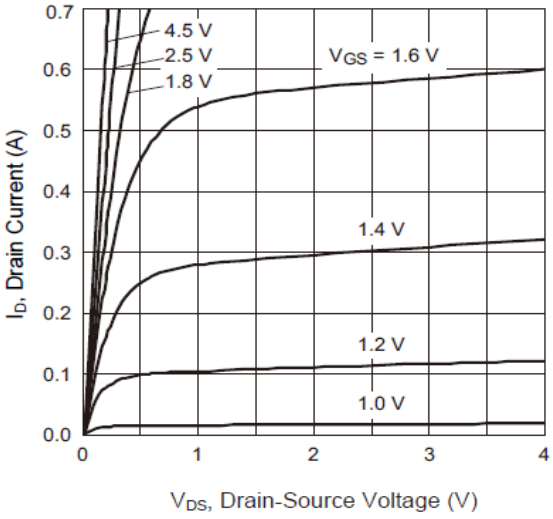
1) Pulse Test: Pulse Width < 300μs, Duty Cycle ≤2%.

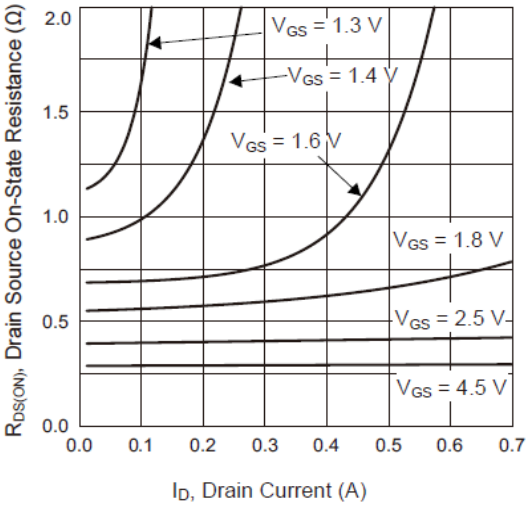
2) Guaranteed by design, not subject to production testing.

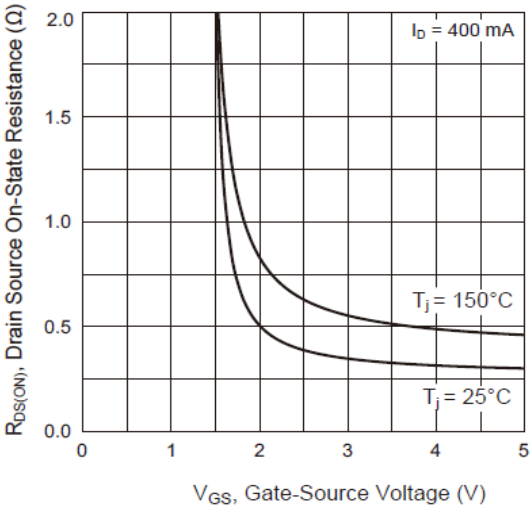
Typical Characteristics



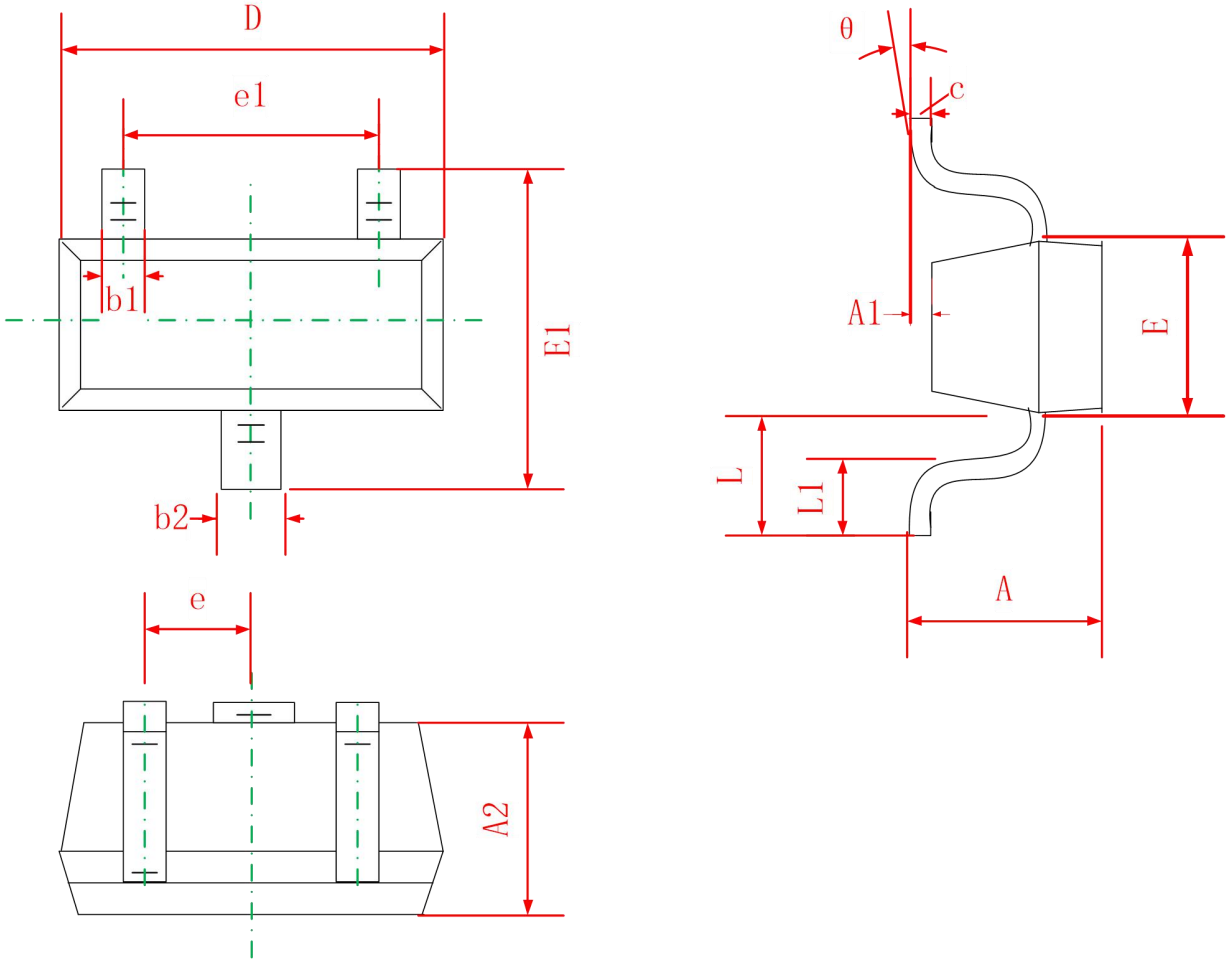








SOT-523 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
C	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500 TYP	
e1	0.900	1.100
L	0.400 REF	
L1	0.260	0.460
θ	0°	8°

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