



N-Channel Enhancement Mode Field Effect Transistor

Product Summary

V_{DS}	40V
I_D	2.5A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	100mohm
$R_{DS(ON)}$ (at $V_{GS}=6V$)	140mohm
ESD protected up to 2.0KV (HBM)	

General Description

Voltage controlled small signal switch
Low input Capacitance
Fast Switching Speed
Low Input / Output Leakage
Moisture Sensitivity Level 1
Part no. with suffix "Q" means AEC-Q101 qualified

Applications

Battery operated systems
Solid-state relays
Direct logic-level interface TTL/CMOS
12V Automotive systems

Absolute Maximum Ratings ($T_A=25$ unless otherwise noted)

Parameter	Symbol	Limit	
Drain Current	I_D	2.5 A	A
Pulsed Drain Current	I_{DM}	2.5 A	A
Total Power Dissipation (4 pins)	P_D	1.1 W	W
Thermal Resistance Junction-to-Ambient @ Steady State ^B	R_{JA}	110 °C/W	/ W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 °C to +150 °C	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER B	DELIVERY MODE
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Electrical Characteristics (T_J=25 unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =40V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ± 20V, V _{DS} =0V			± 10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V				

Typical Performance Characteristics

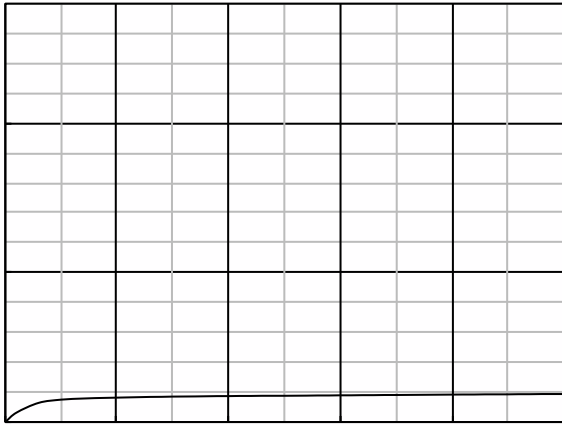


Figure1. Output Characteristics

Figure2. Transfer Characteristics

Figure3. Capacitance Characteristics

Figure4. Gate Charge

Figure5. On-Resistance vs Gate to Source Voltage

Figure6. Normalized On-Resistance

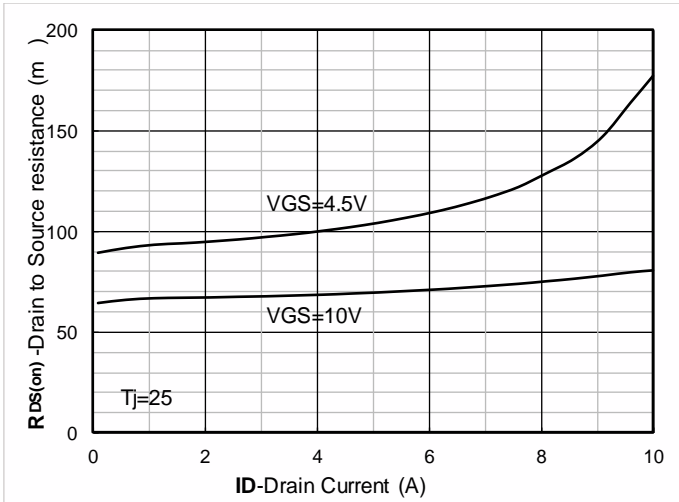


Figure 7. R_{DS(on)} VS Drain Current

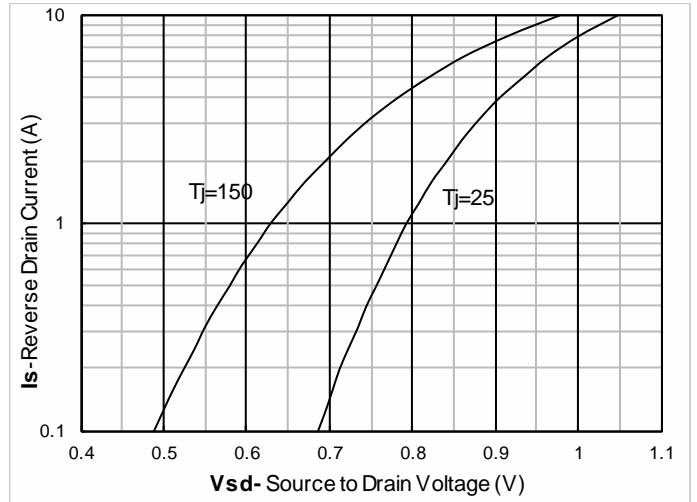


Figure 8. Forward characteristics of reverse diode



Figure 9. Normalized breakdown voltage

Figure 10. Normalized Threshold voltage

Figure 11. Current dissipation

Figure 12. Power dissipation

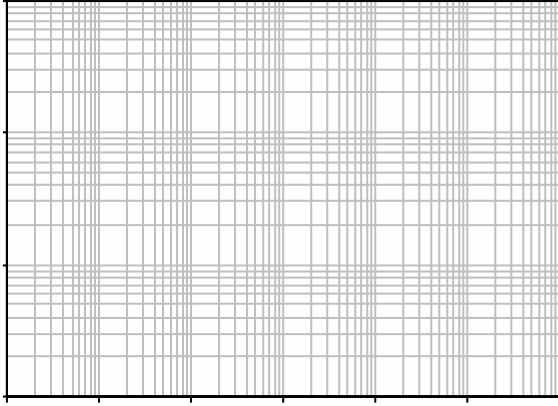
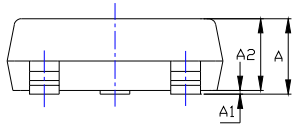
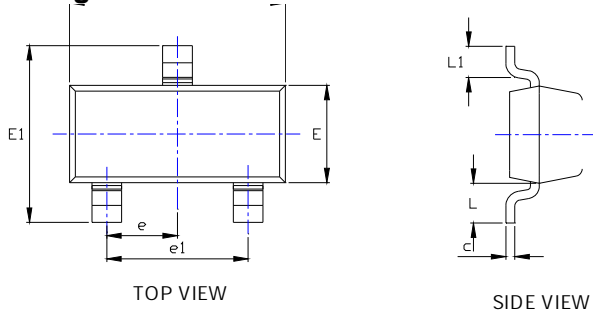


Figure 13. Maximum Transient Thermal Impedance

Figure 14. Safe Operation Area



SOT-23 Package Outline Dimensions



UNIT mm

SUGGESTED SOLDER PAD LAYOUT



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