

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
240V	15Ω@10V	0.11A
	20Ω@5V	

Feature

- Low input capacitance
- High V_{DSS} rating for power application
- Low input / output leakage

Application

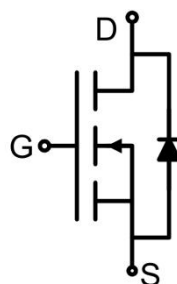
- Motor control
- DC-DC converters
- Power management functions

Package

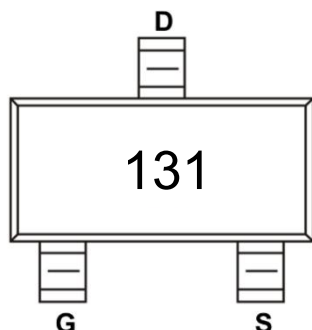


SOT-23

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	240	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.11	A
Continuous Drain Current ($T_A=70^{\circ}\text{C}$)	$I_D(70^{\circ}\text{C})$	0.09	A
Pulsed Drain Current ($t_p=10\mu\text{s}$)	I_{DM}	0.8	A
Power Dissipation	P_D	0.35	W
Thermal Resistance Junction to Ambient ¹⁾	$R_{\theta JA}$	310	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature	T_J	$-55 \sim +150$	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

Electrical characteristics ($T_A=25^{\circ}\text{C}$, 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	240			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =240V, V _{GS} =0V			1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.6	2	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =0.1A		13	15	Ω
		V _{GS} =5V, I _D =0.1A		15	20	
Dynamic characteristics ⁴⁾						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f =1MHz		50		pF
Output Capacitance	C _{oss}			19		
Reverse Transfer Capacitance	C _{rss}			8		
Gate Charge	Q _g	V _{DS} =192V, V _{GS} =10V I _D =0.2A		5.6		nC
Gate-Source Charge	Q _{gs}			0.8		
Gate-Drain Charge	Q _{gd}			1.9		
Source-Drain Diode characteristics						
Diode Forward current	I _S				0.11	A
Diode Forward voltage	V _{SD}	V _{GS} =0V, I _S =0.1A			1.5	V

Notes:

- 1) Surface-mounted on 1 inch² FR-4 board with 2OZ copper.
- 2) Guaranteed by design, not subject to production testing.

Typical Characteristics

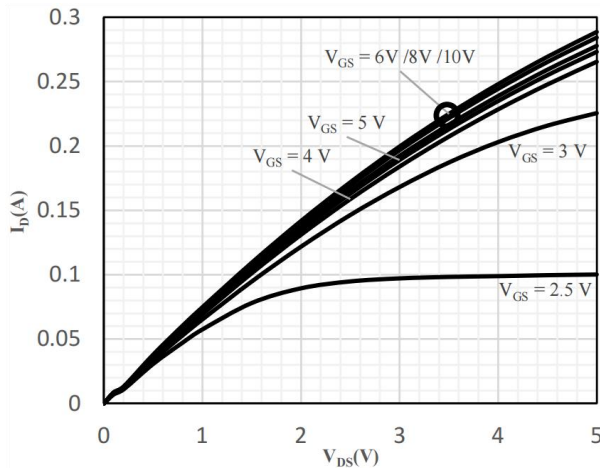


Fig 1 Typical Output Characteristics

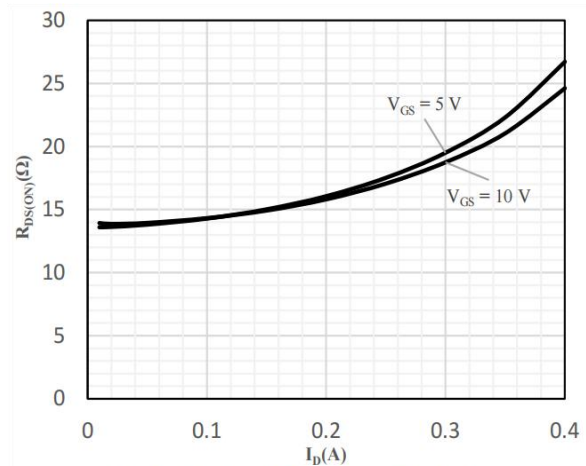


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

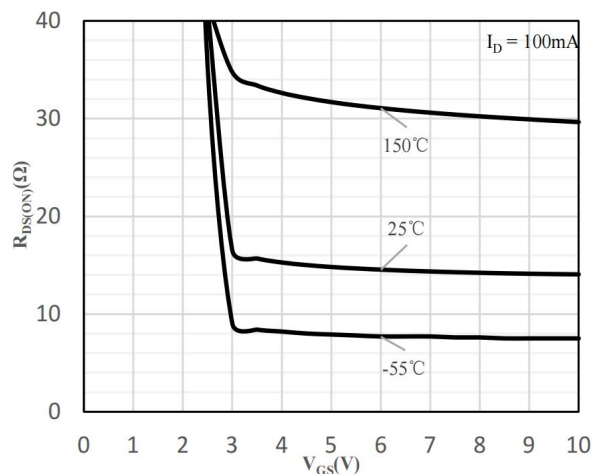


Fig 3 On-Resistance vs. Gate-Source Voltage

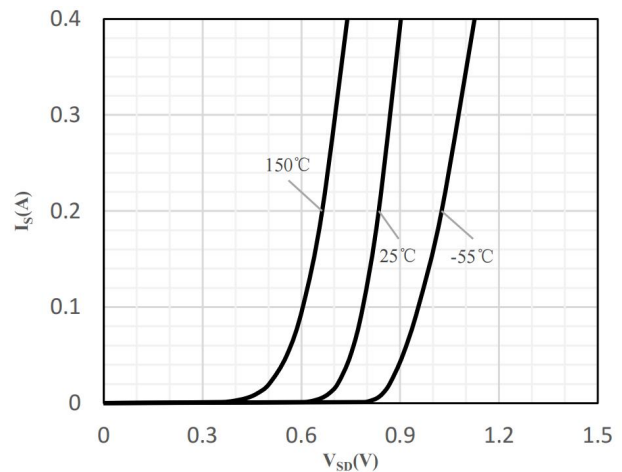


Fig 4 Body-Diode Characteristics

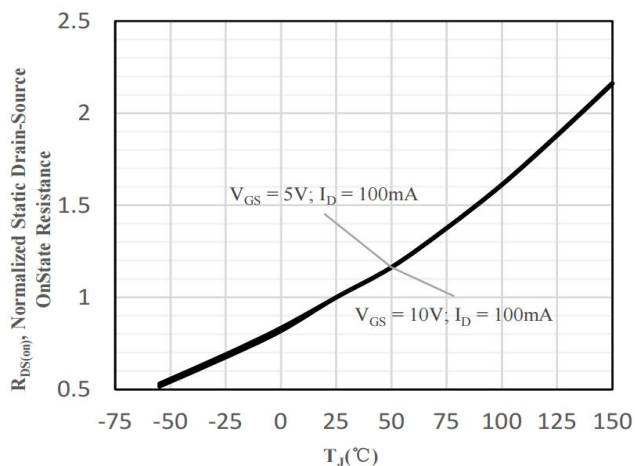


Fig 5 Normalized On-Resistance vs. Junction Temperature

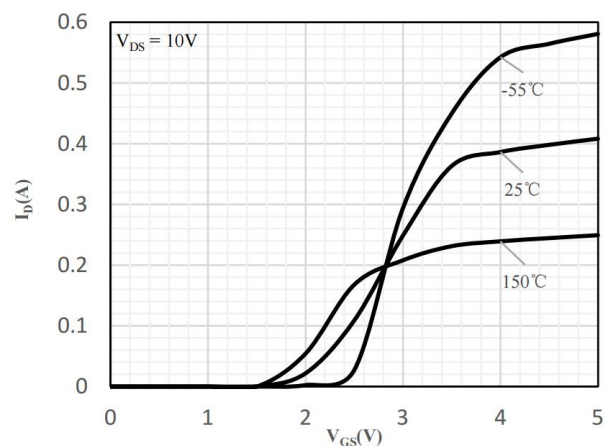


Fig 6 Transfer Characteristics

Typical Characteristics

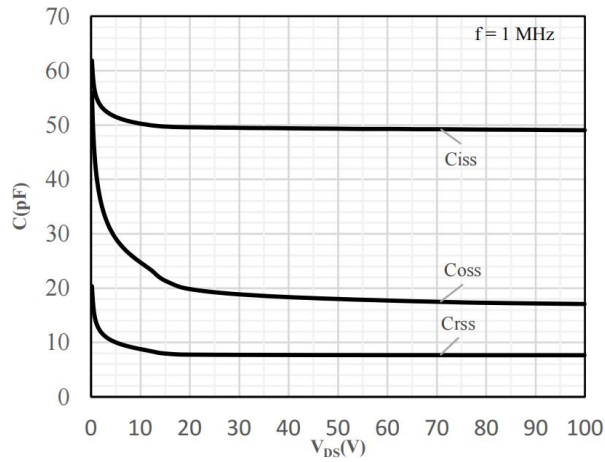


Fig 7 Capacitance Characteristics

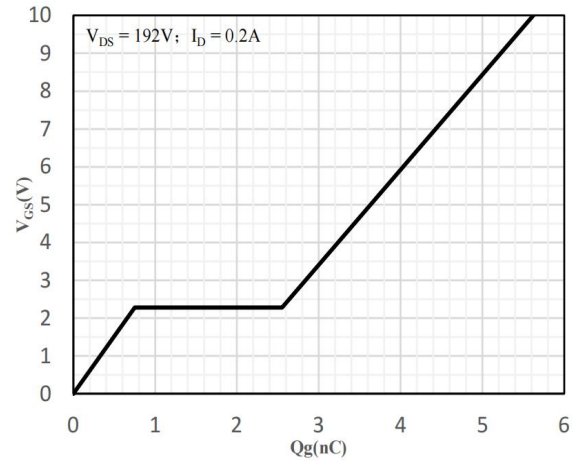


Fig 8 Gate-Charge Characteristics

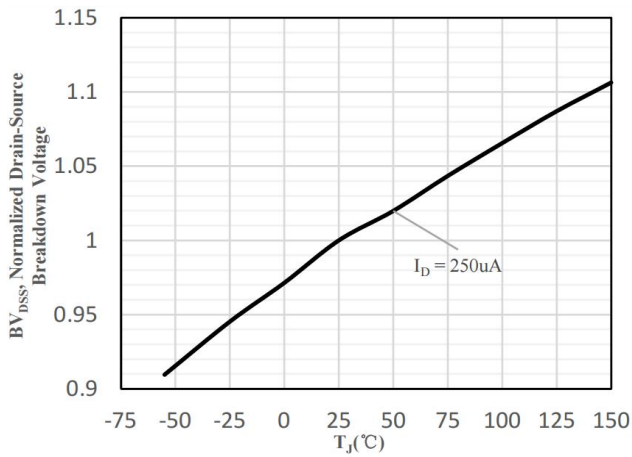


Fig 9 Normalized Breakdown Voltage vs. Junction Temperature

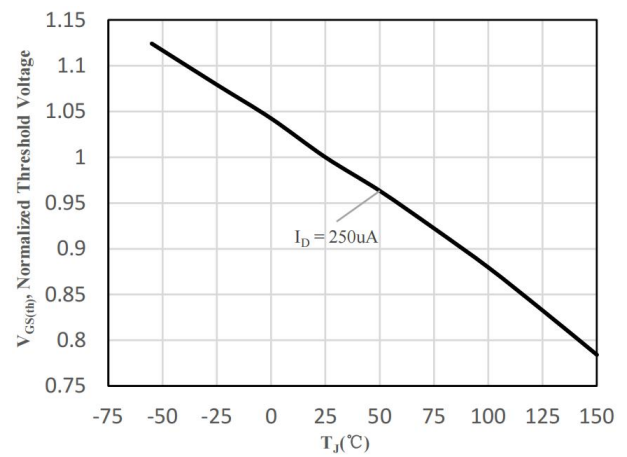


Fig 10 Normalized $V_{GS(th)}$ vs. Junction Temperature

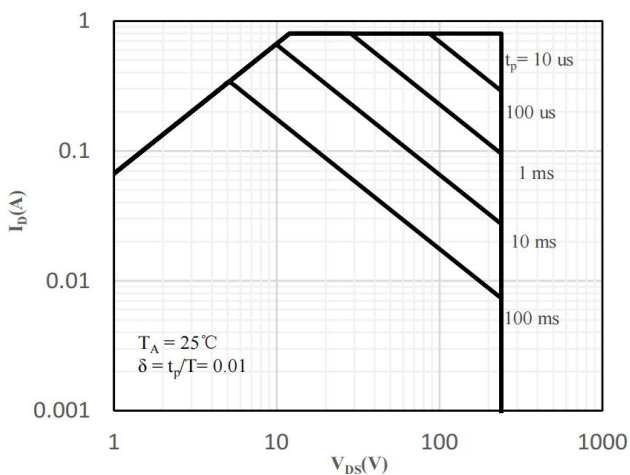


Fig 11 Safe Operation Area

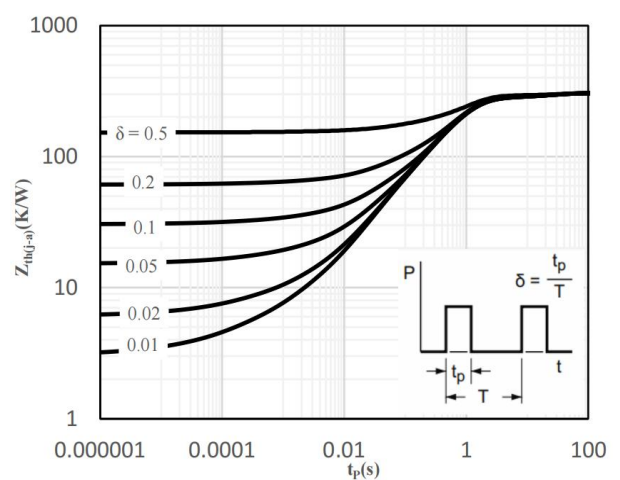
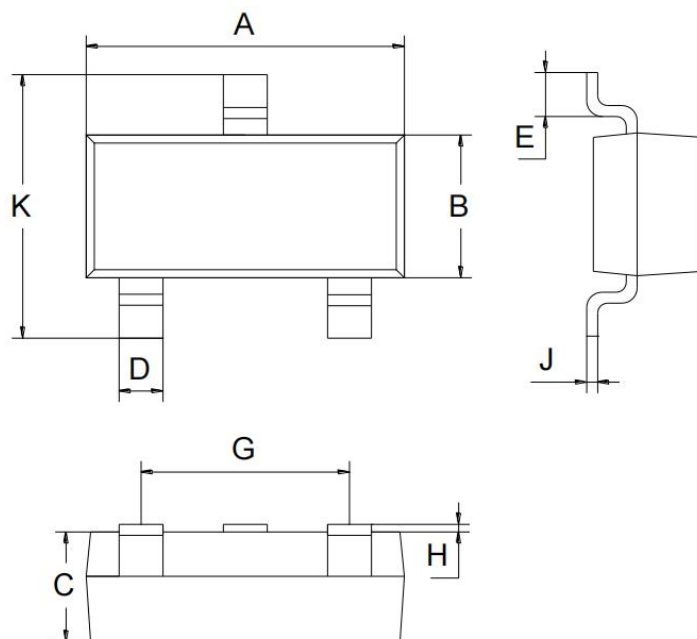


Fig 12 Maximum transient thermal impedance

SOT-23 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.700	3.100	0.106	0.122
B	1.100	1.500	0.043	0.059
C	0.900	1.100	0.035	0.043
D	0.300	0.500	0.012	0.020
E	0.350	0.480	0.014	0.019
G	1.800	2.000	0.071	0.079
H	0.020	0.100	0.001	0.004
J	0.050	0.150	0.002	0.006
K	2.200	2.600	0.087	0.102