

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	18m Ω @4.5V	6.8A
	22m Ω @2.5V	
	39m Ω @1.8V	

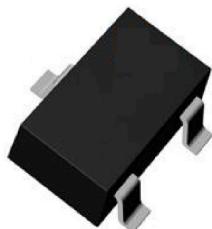
Feature

- Trench Power LV MOSFET technology
- High Power and current handing capability

Application

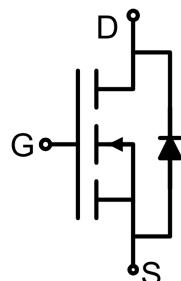
- Load Switch for Portable Devices
- PWM application

Package

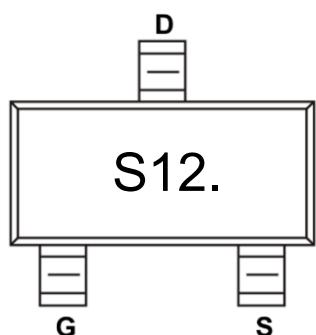


SOT-23

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±10	V
Continuous Drain Current	I _D	6.8	A
Pulsed Drain Current	I _{DM}	27	A
Power Dissipation	P _D	1.2	W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

Electrical characteristics (T_J = 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	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} = ±10V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250µA	0.45		1.0	V
Drain-source on-resistance ¹⁾	R _{DS(on)}	V _{GS} = 4.5V, I _D = 6.8A			18	mΩ
		V _{GS} = 2.5V, I _D = 3.0A			22	
		V _{GS} = 1.8V, I _D = 2.5A			39	
Dynamic characteristics²⁾						
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		888		pF
Output Capacitance	C _{oss}			133		
Reverse Transfer Capacitance	C _{rss}			117		
Total Gate Charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 6.8A		11.05		nC
Gate-Source Charge	Q _{gs}			1.73		
Gate-Drain Charge	Q _{gd}			3.1		
Turn-on delay time	t _{d(on)}	V _{DD} = 10V, V _{GS} = 4.5V, R _{GEN} = 3Ω, R _L = 1.5Ω		7		nS
Turn-on rise time	t _r			46		
Turn-off delay time	t _{d(off)}			30		
Turn-off fall time	t _f			52		
Source-Drain Diode characteristics						
Diode Forward Current ¹⁾	I _S				6.8	A
Diode Forward voltage	V _{DS}	V _{GS} = 0V, I _S = 6.8A			1.2	V

Notes:

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

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



Typical Characteristics

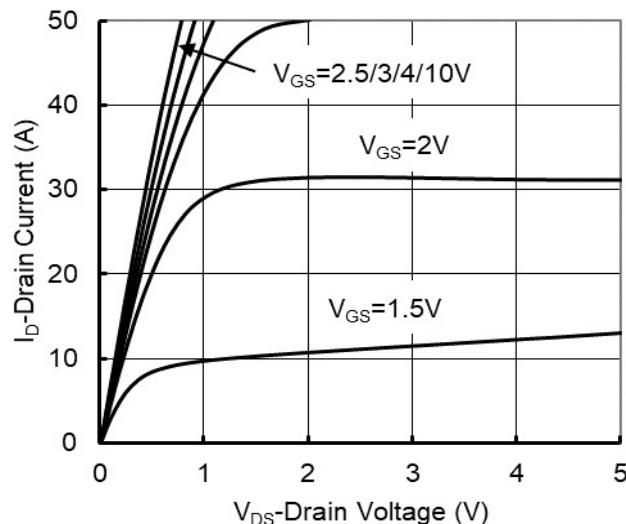


Figure 1. Output Characteristics

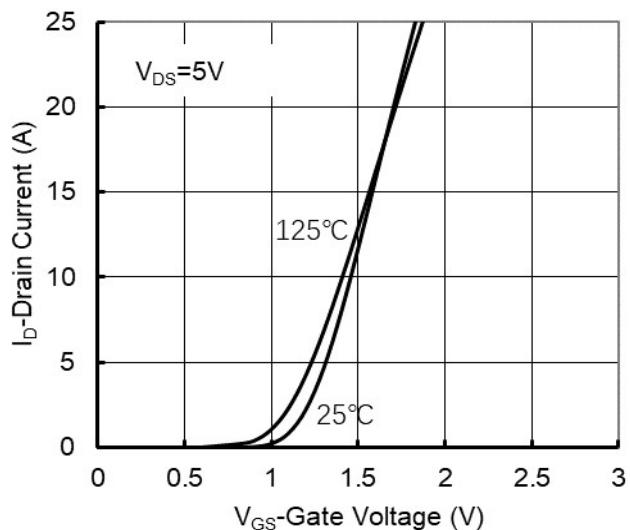


Figure 2. Transfer Characteristics

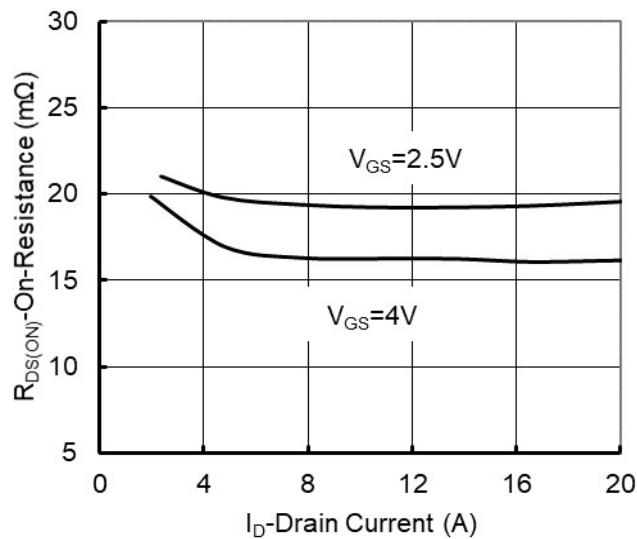


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

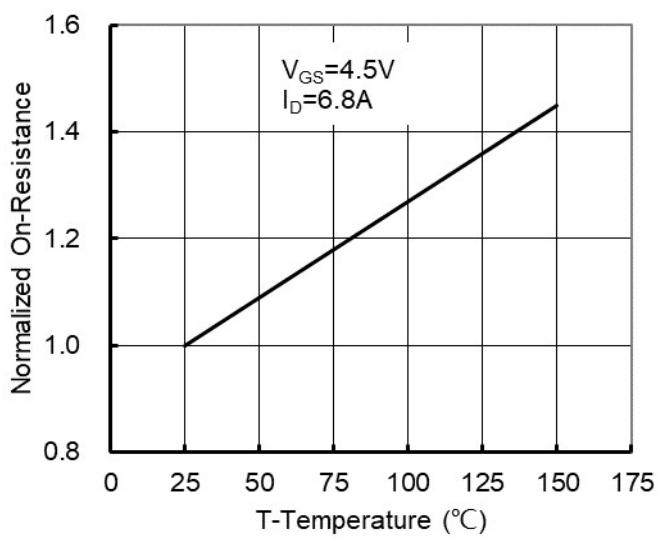


Figure 4: On-Resistance vs. Junction Temperature

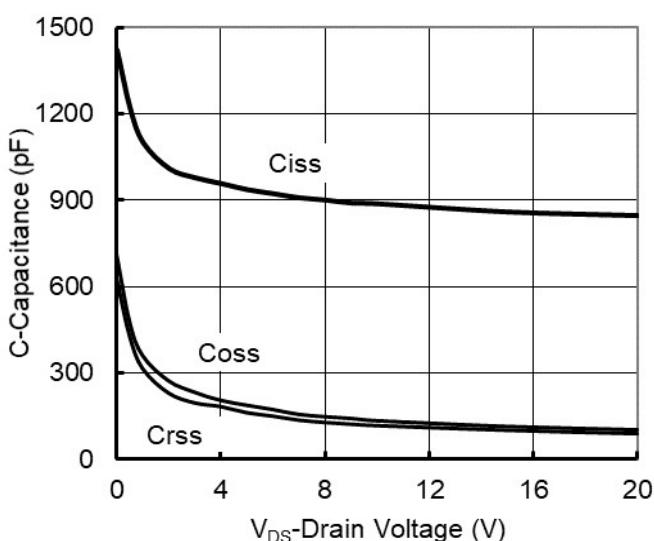


Figure 5. Capacitance Characteristics

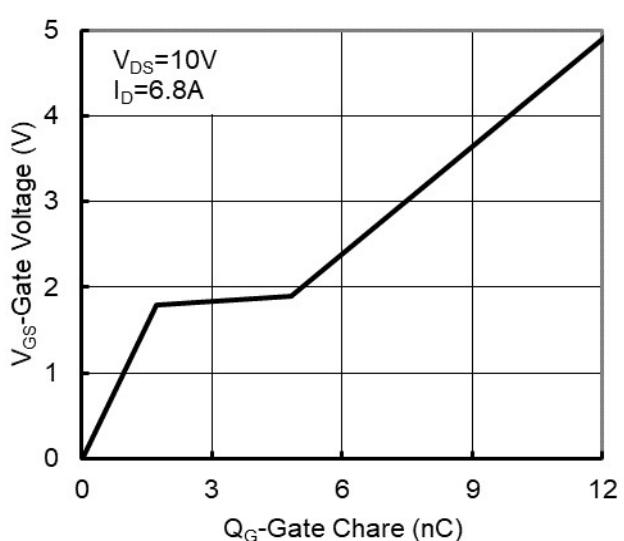


Figure 6. Gate Charge

Typical Characteristics

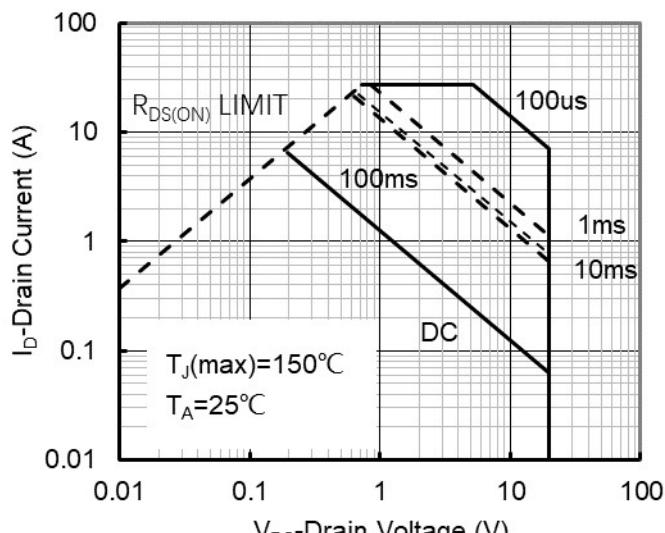


Figure 7. Safe Operation Area

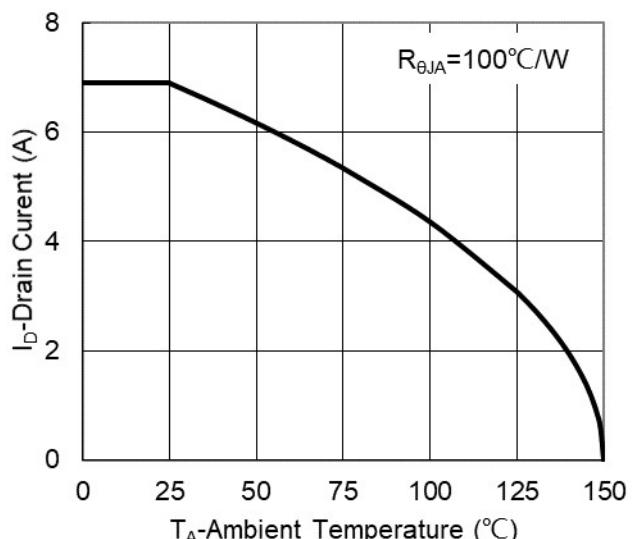


Figure 8. Maximum Continuous Drain Current vs Ambient Temperature

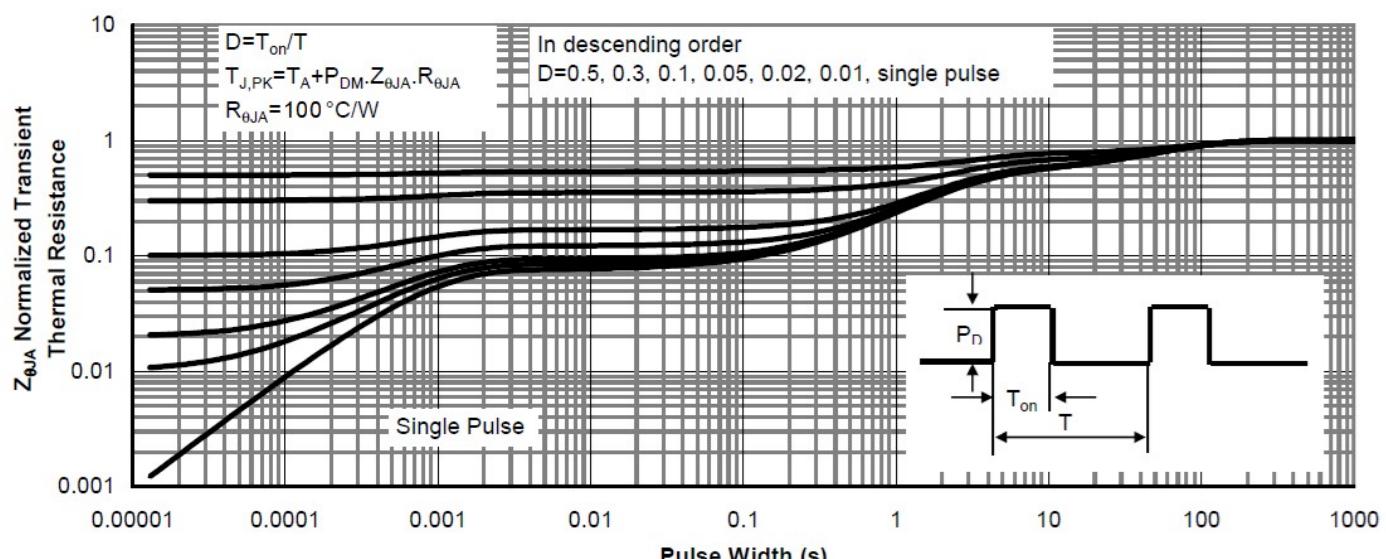
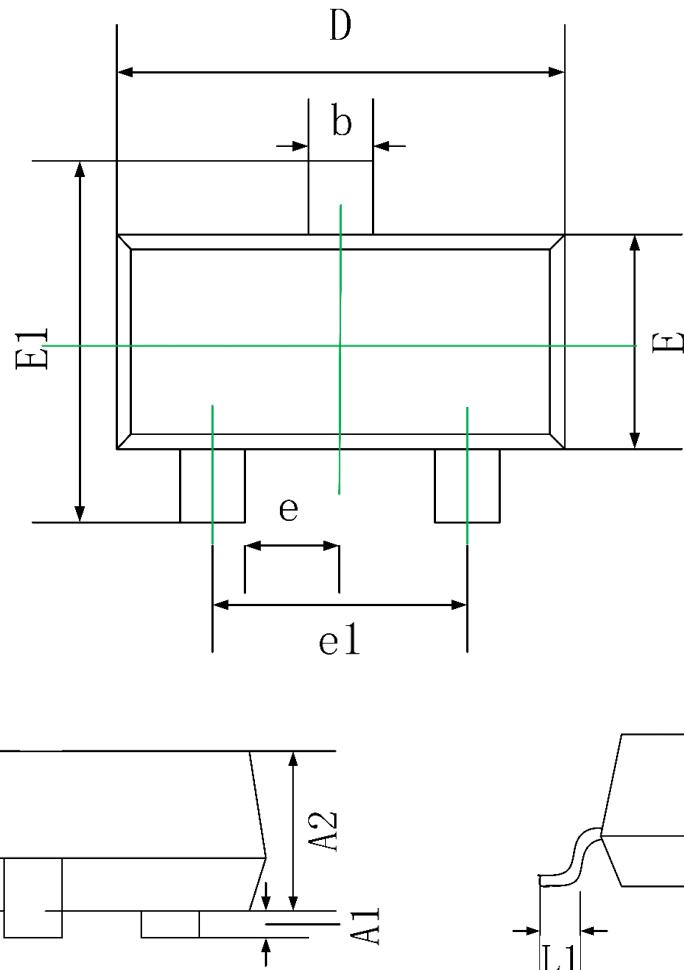


Figure 9. Normalized Maximum Transient Thermal Impedance

SOT-23 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.200	0.003	0.008
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020