

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30V	12mΩ@10V	10A
	18mΩ@4.5V	

Feature

- Advanced trench technology
- Excellent $R_{DS(on)}$
- Low gate charge

Application

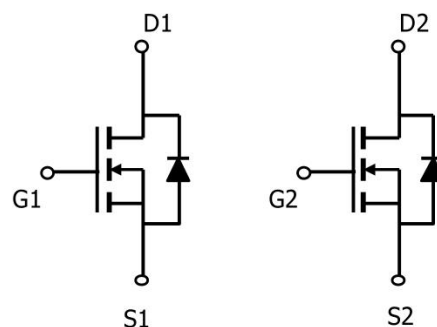
- Lithium battery protection
- Wireless impact

Package



SOP-8

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹⁾ ($V_{GS}=10\text{V}$, $T_C=25^\circ\text{C}$)	I_D	10	A
Continuous Drain Current ¹⁾ ($V_{GS}=10\text{V}$, $T_C=100^\circ\text{C}$)	$I_D(100^\circ\text{C})$	8.2	A
Pulsed Drain Current ²⁾	I_{DM}	30	A
Single Pulse Avalanche Energy	E_{AS}	24.2	mJ
Power Dissipation ³⁾ ($T_C=25^\circ\text{C}$)	P_D	26	W
Thermal Resistance Junction to Case ¹⁾	$R_{\theta JC}$	4.8	$^\circ\text{C/W}$
Operating Junction Temperature	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

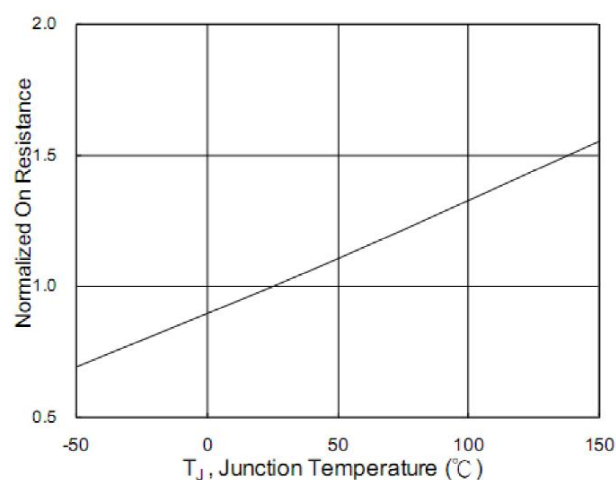
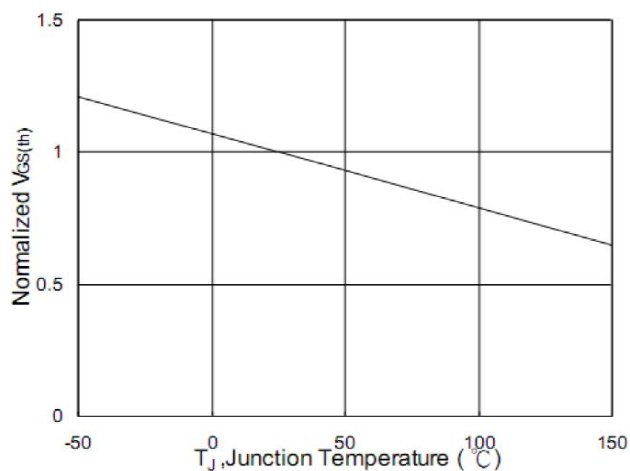
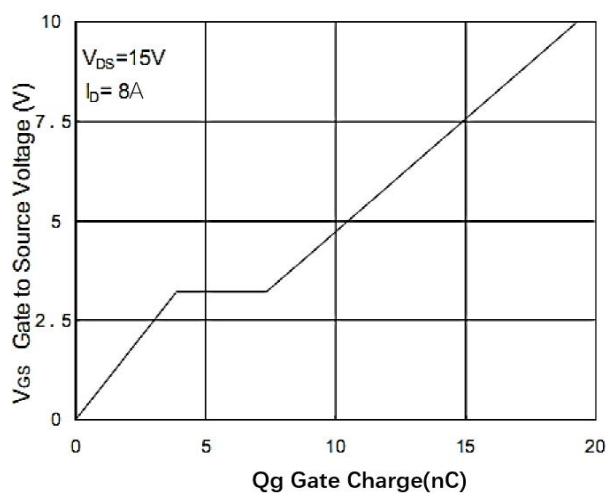
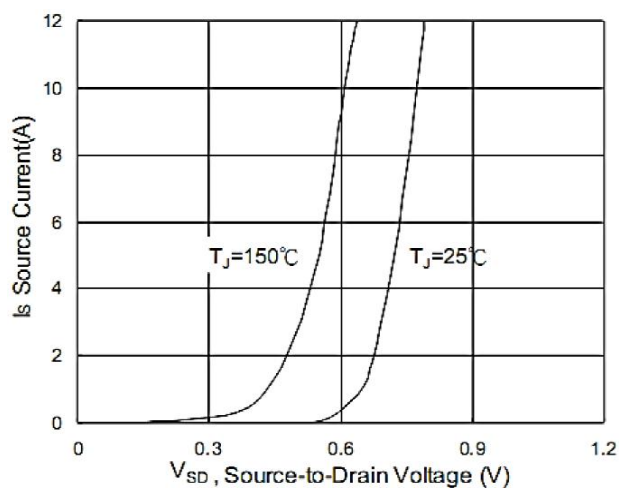
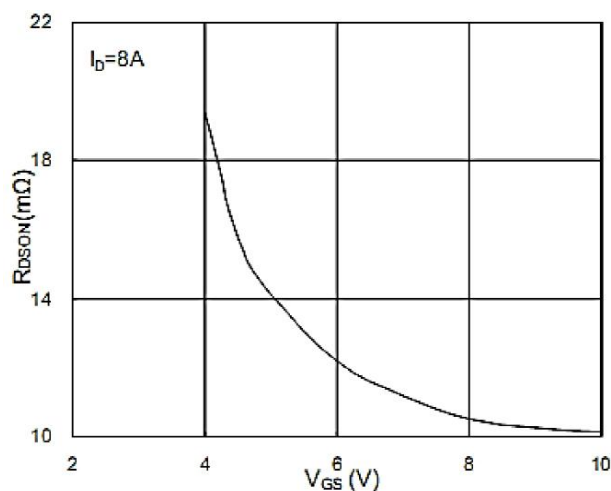
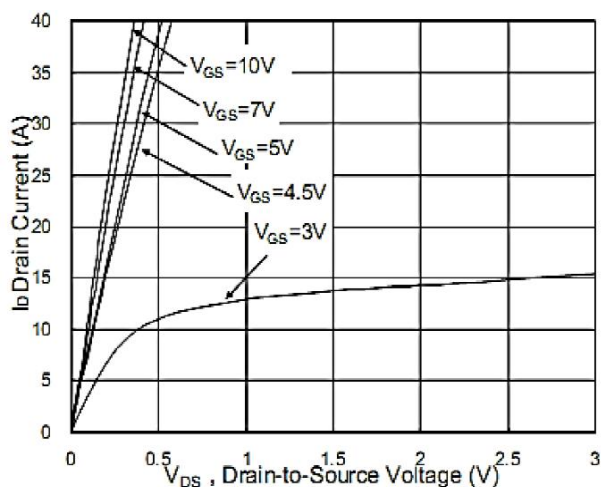
Electrical characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.6	2.5	V
Drain-source on-resistance ²⁾	$R_{DS(on)}$	$V_{GS}=10V, I_D=15A$		8.5	12	mΩ
		$V_{GS}=4.5V, I_D=10A$		14	18	
Dynamic characteristics ⁵⁾						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		896		pF
Output Capacitance	C_{oss}			126		
Reverse Transfer Capacitance	C_{rss}			108		
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=4.5V, I_D=12A$		9.82		nC
Gate-Source Charge	Q_{gs}			2.24		
Gate-Drain Charge	Q_{gd}			5.54		
Turn-on delay time	$t_{d(on)}$	$V_{DS}=15V, V_{GS}=10V, I_D=20A$ $R_G=1.5\Omega$		6.4		nS
Turn-on rise time	t_r			39		
Turn-off delay time	$t_{d(off)}$			21		
Turn-off fall time	t_f			4.7		
Source-Drain Diode characteristics						
Diode Forward Current ^{1,4)}	I_S	$V_G=V_D=0V$, Force Current			10	A
Diode Forward voltage ²⁾	V_{DS}	$V_{GS}=0V, I_S=1A$			1	V

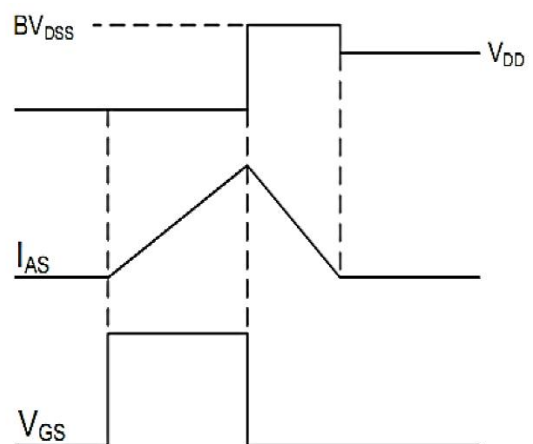
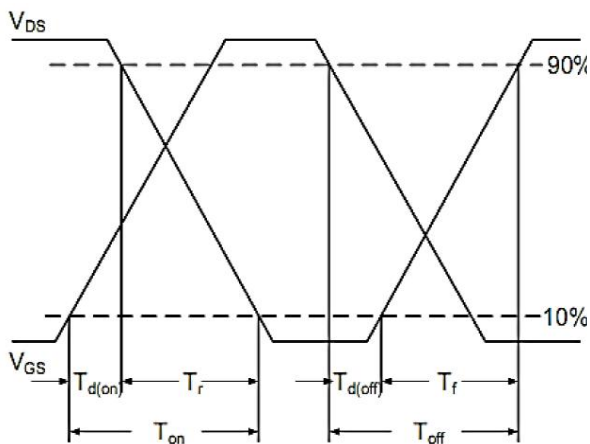
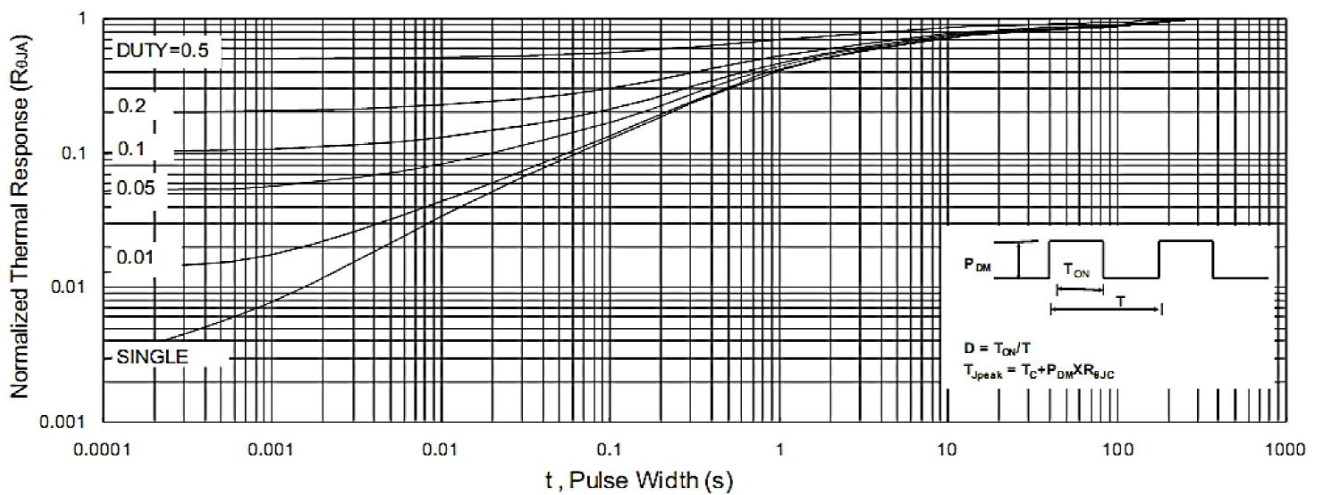
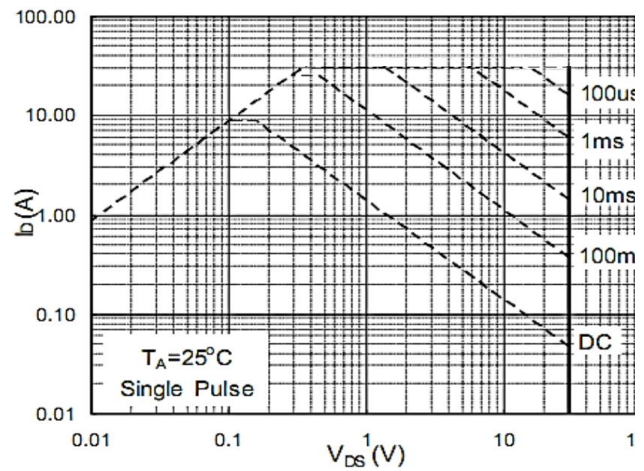
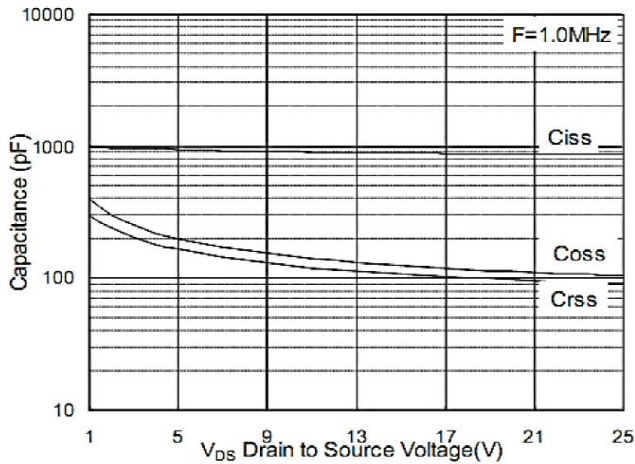
Notes:

- 1) The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2) The data tested by pulsed, pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
- 3) The power dissipation is limited by 150°C junction temperature.
- 4) The data is theoretically the same as I_D and I_{DM} , in real applications, should be limited by total power dissipation.
- 5) Guaranteed by design, not subject to production testing.

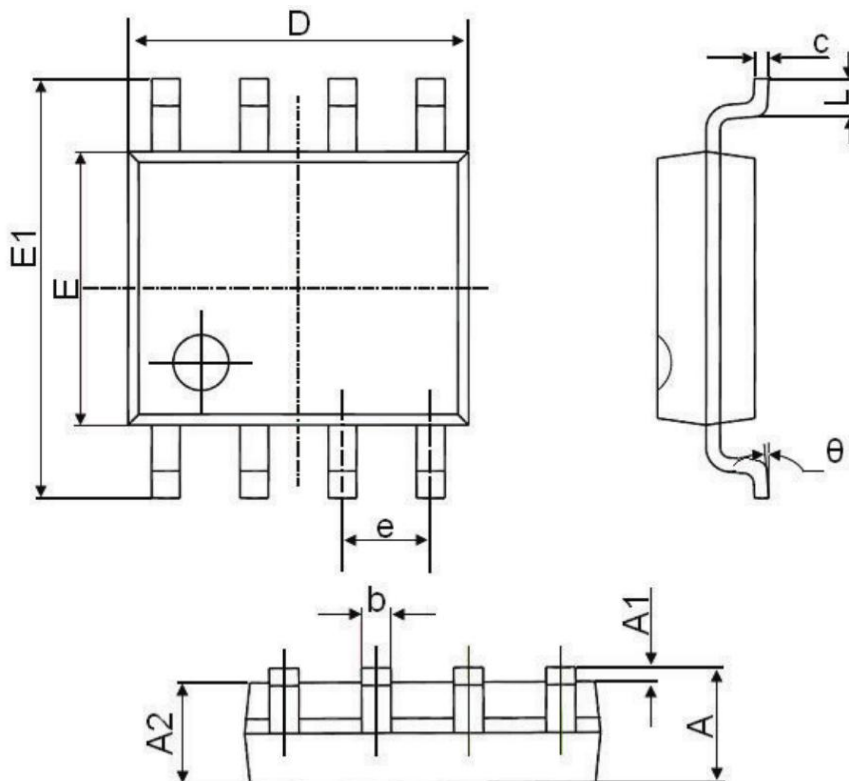
Typical Characteristics



Typical Characteristics



SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.201
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 BSC.		0.050 BSC.	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°