

**Features**

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- 100% EAS Guaranteed
- Green Device Available

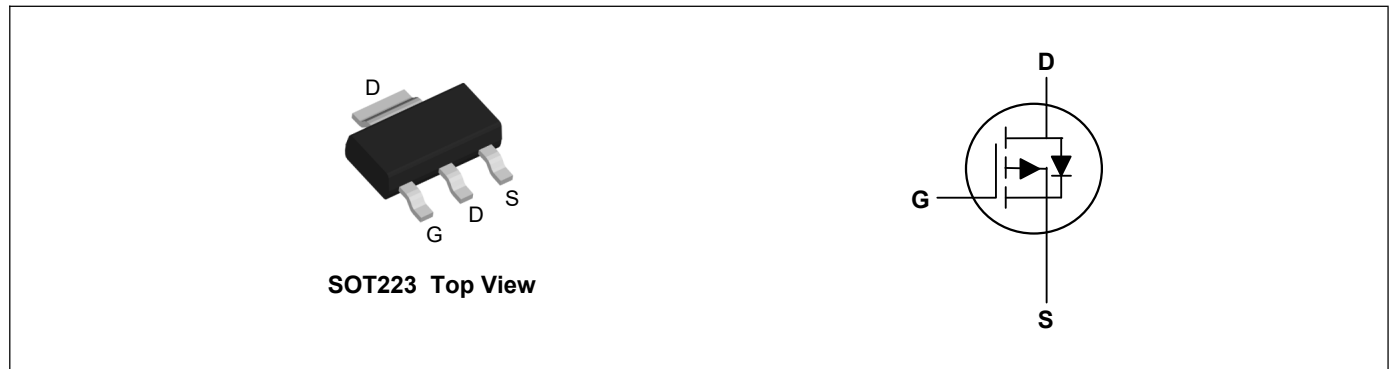
**Product Summary**



$V_{DS}$	-100	V
$I_D$	-2.6	A
$R_{DS(ON)}$ (at $V_{GS}=-10V$ )	225	m $\Omega$
$R_{DS(ON)}$ (at $V_{GS}=-4.5V$ )	245	m $\Omega$

**Applications**

- High Frequency Point-of-Load, Synchronous Buck Converter
- Networking DC-DC Power System
- Load Switch



**Absolute Maximum Ratings( $T_A=25^{\circ}C$ , unless otherwise noted)**

Parameter	Symbol	Rating	Units
Drain-Source Voltage	$V_{DS}$	-100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current <sup>1</sup>	$I_D@T_A=25^{\circ}C$	-2.6	A
Continuous Drain Current <sup>1</sup>	$I_D@T_A=70^{\circ}C$	-2.1	A
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	-10.4	A
Single Pulse Avalanche Energy <sup>3</sup>	$E_{AS}$	12	mJ
Avalanche Current	$I_{AS}$	-2	A
Total Power Dissipation	$P_D@T_A=25^{\circ}C$	2.5	W
Storage Temperature Range	$T_{STG}$	-55 to 150	$^{\circ}C$
Operating Junction Temperature Range	$T_J$	-55 to 150	$^{\circ}C$

**Thermal Characteristics**

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance Junction-Ambient <sup>1</sup>	$R_{\theta JA}$	---	50	$^{\circ}C/W$
Thermal Resistance Junction-Case <sup>1</sup>	$R_{\theta JC}$	---	15	$^{\circ}C/W$

**Electrical Characteristics (T<sub>J</sub>=25°C, unless otherwise noted)**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-100	---	---	V
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-2A	---	185	225	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-1A	---	190	245	mΩ
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =-250uA	-1	---	-3	V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =-80V, V <sub>GS</sub> =0V	---	---	-1	uA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	---	---	±100	nA
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-2A	---	6	---	S
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-80V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-2A	---	25	---	nC
Gate-Source Charge	Q <sub>gs</sub>		---	3.4	---	
Gate-Drain Charge	Q <sub>gd</sub>		---	3.8	---	
Turn-On Delay Time	T <sub>d(on)</sub>	V <sub>DS</sub> =-50V, V <sub>GS</sub> =-10V, R <sub>G</sub> =1Ω, I <sub>D</sub> =-2A	---	6.6	---	ns
Rise Time	T <sub>r</sub>		---	18	---	
Turn-Off Delay Time	T <sub>d(off)</sub>		---	120	---	
Fall Time	T <sub>f</sub>		---	46	---	
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V, f=1MHz	---	1410	---	pF
Output Capacitance	C <sub>oss</sub>		---	50	---	
Reverse Transfer Capacitance	C <sub>rss</sub>		---	40	---	

**Drain-Source Diode Characteristics**

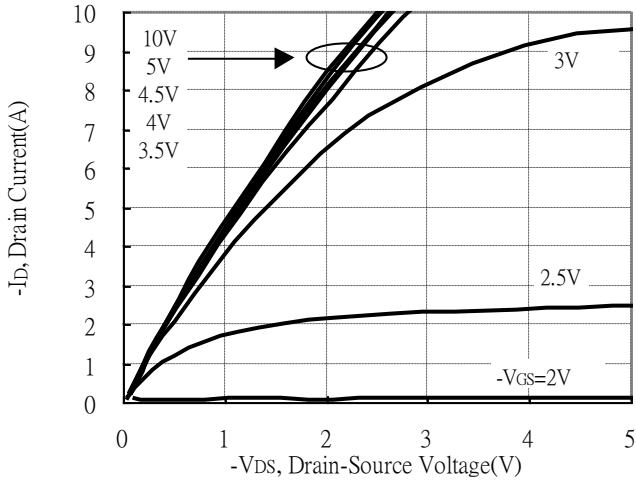
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Continuous Source Current <sup>1</sup>	I <sub>S</sub>		---	---	-2.6	A
Diode Forward Voltage <sup>2</sup>	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =-2A, T <sub>J</sub> =25°C	---	---	-1.3	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =-2A, di/dt=100A/μs, T <sub>J</sub> =25°C	---	18	---	nS
Reverse Recovery Charge	Q <sub>rr</sub>		---	15	---	nC

**Note:**

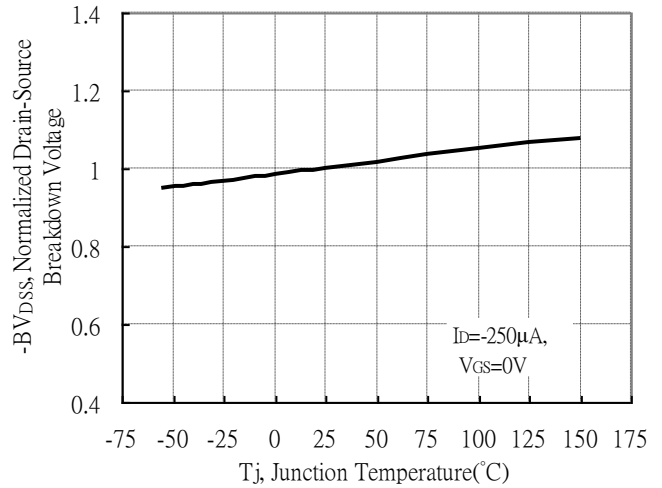
- 1.The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper.
- 2.The data tested by pulsed, pulse width ≤ 300us, duty cycle ≤ 2%
- 3.The EAS data shows Max. rating. The test condition is V<sub>DD</sub>=-30V, V<sub>GS</sub>=-10V, L=6mH

**Typical Characteristics**

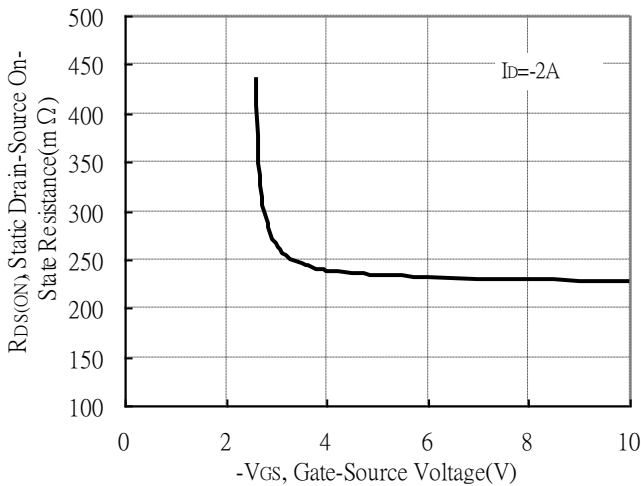
Typical Output Characteristics



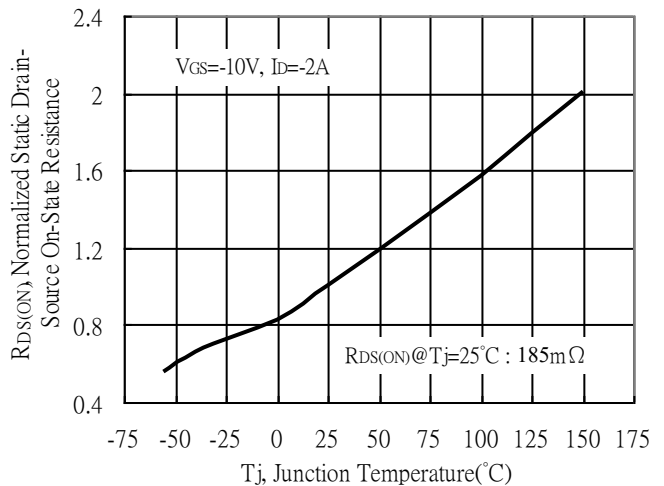
Brekdown Voltage vs Ambient Temperature



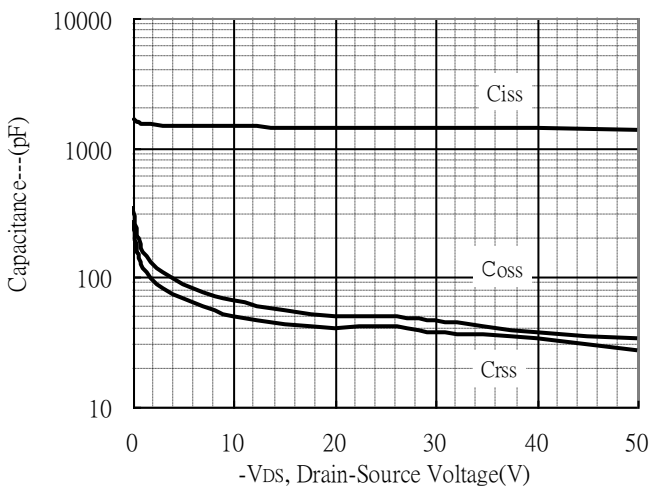
Static Drain-Source On-State Resistance vs Gate-Source Voltage



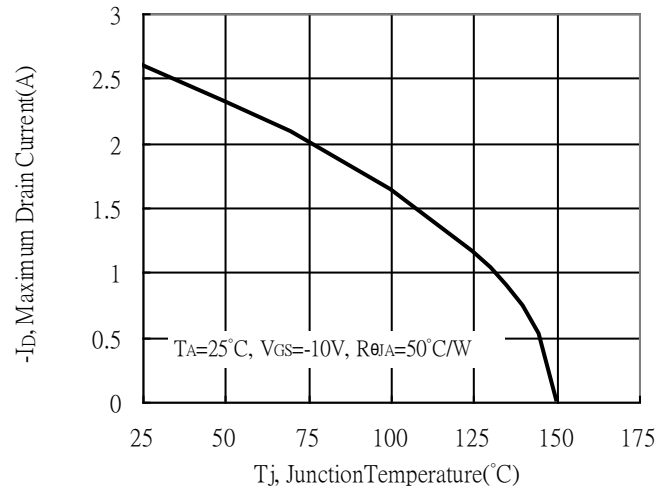
Drain-Source On-State Resistance vs Junction Temperature



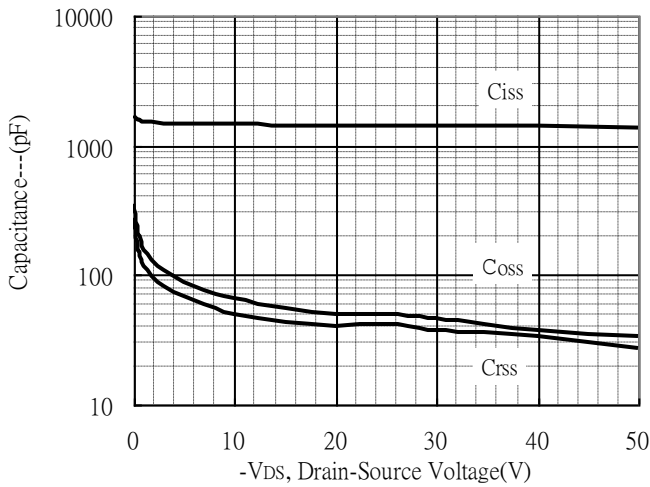
Capacitance vs Drain-to-Source Voltage



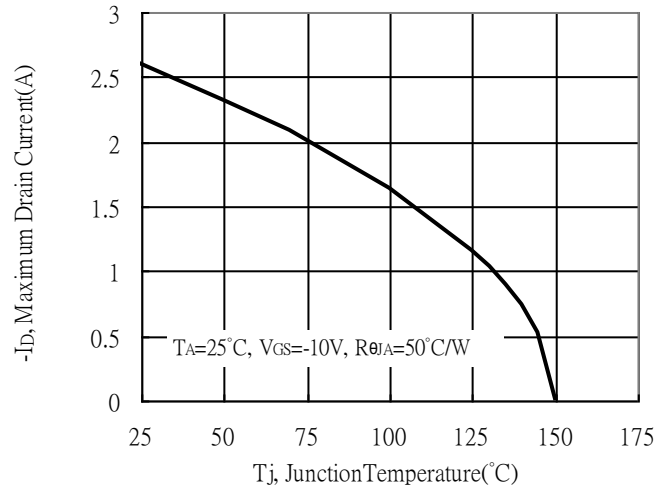
Maximum Drain Current vs Junction Temperature



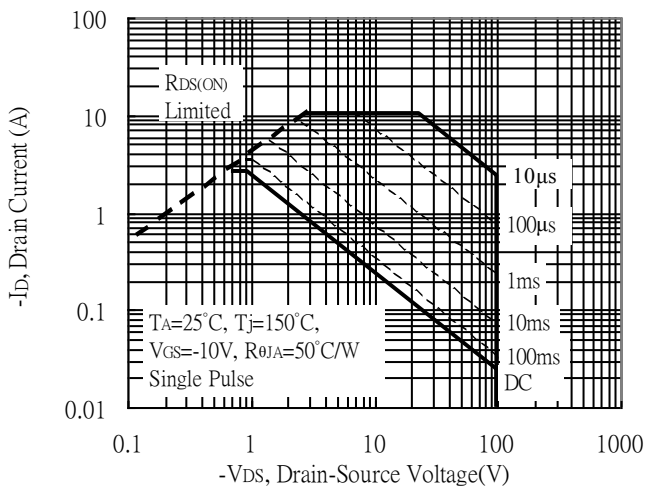
Capacitance vs Drain-to-Source Voltage



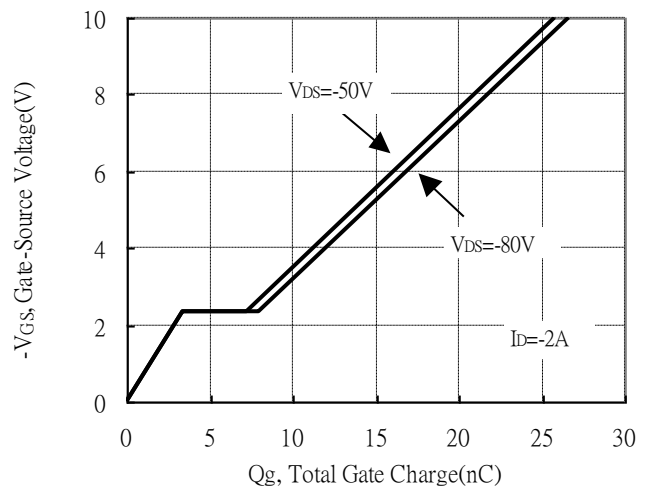
Maximum Drain Current vs Junction Temperature



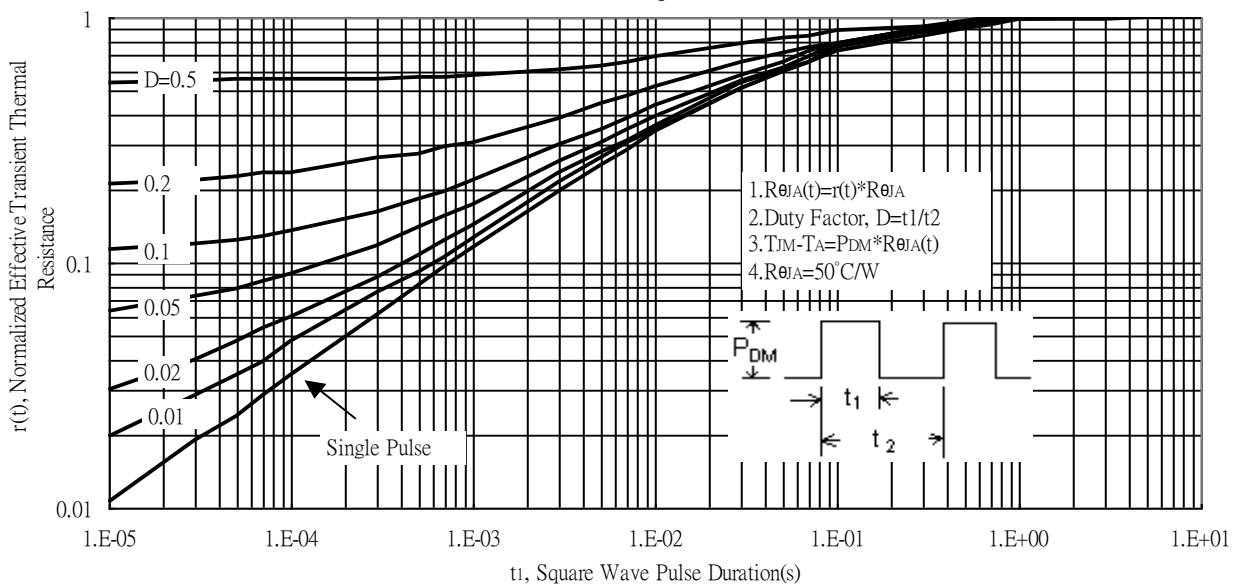
Maximum Safe Operating Area



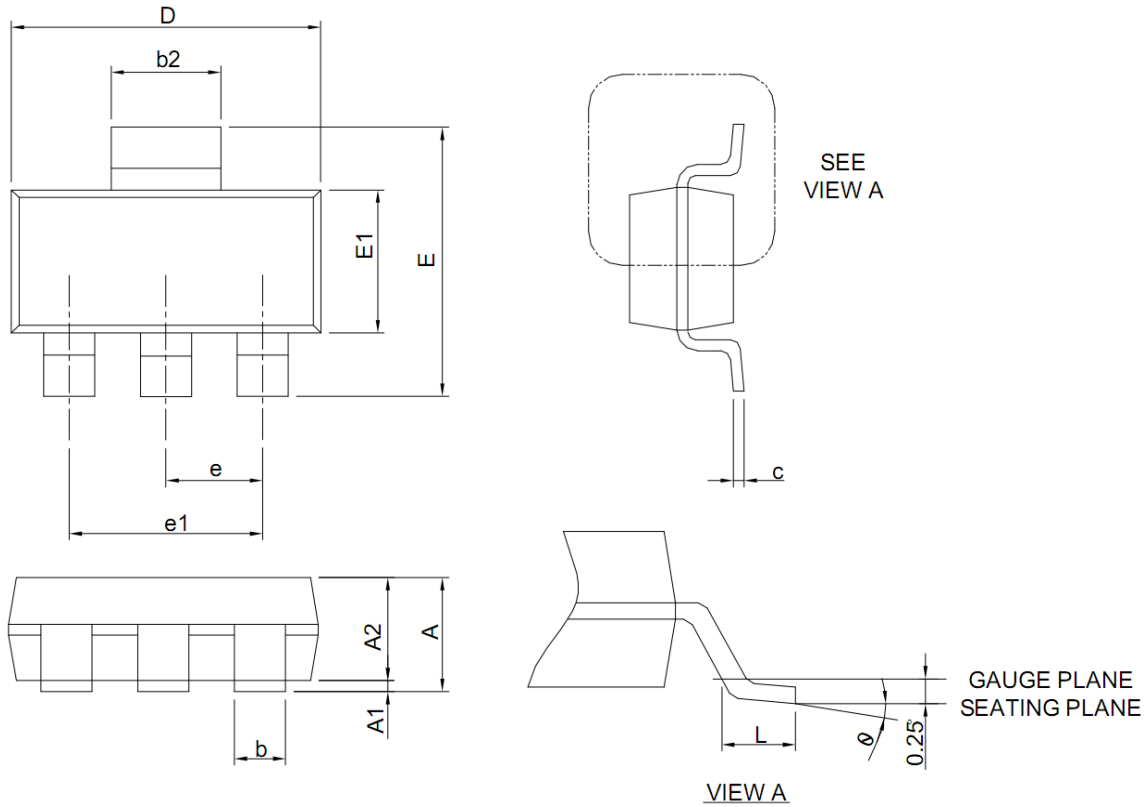
Gate Charge Characteristics



Transient Thermal Response Curves



**SOT223 Package Outline Dimensions**



Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
<b>A</b>	1.50	1.65	1.80	<b>A1</b>	0.02	0.06	0.10
<b>A2</b>	1.50	1.60	1.70	<b>b</b>	0.66	0.72	0.80
<b>b2</b>	2.90	3.00	3.10	<b>c</b>	0.23	0.30	0.35
<b>D</b>	6.30	6.50	6.70	<b>E</b>	6.70	7.00	7.30
<b>E1</b>	3.30	3.50	3.70	<b>e</b>	2.30 REF		
<b>e1</b>	4.60 REF			<b>L</b>	0.75	--	1.15
<b>θ</b>	0°	--	10°				