

FEATURES

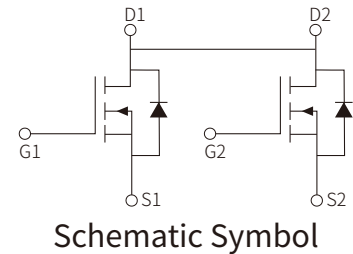
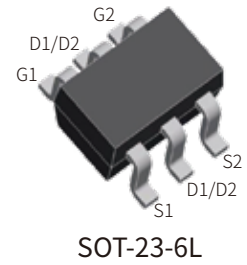
- | $V_{DS}(\min) = 19.5\text{ V}, I_D(\max) = 5.8\text{ A}$
- | Low on state resistance $R_{DS(on)} = 22\text{ m}\Omega$ TYP. ($V_{GS} = 4.5\text{ V}$)
- | $R_{DS(on)} = 25\text{ m}\Omega$ TYP. ($V_{GS} = 2.5\text{ V}$)
- | Lead free product is acquired
- | Surface Mount Package

APPLICATION

- | Battery protection
- | Battery Powered Systems
- | Power Management in Notebook Computer
- | Portable Equipment

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	19.5	V
Continuous Drain Current $T_c=25^\circ\text{C}$	I_D	5.8	A
Pulsed Drain Current	I_{DM}	24	A
Gate Source Voltage	V_{GSS}	± 12	V
Thermal Resistance $R_{\theta JA}=100^\circ\text{C/W}$	$R_{\theta JA}$	1.32	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _{DS} =250μA	19.5			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.55	0.7	0.95	V
Drain Cut-Off Current	I _{DSS}	V _{DS} =19.5V, V _{GS} =0V			1	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			±100	nA
Drain Source ON Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =3A		22	25	mΩ
		V _{GS} =2.5V, I _D =2A		25	32	mΩ
Dynamic Characteristics ⁽²⁾						
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =4A		6.1		nC
Gate-Source Charge	Q _{gs}			0.9		nC
Gate-Drain Charge	Q _{gd}			1.8		nC
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =10V, f=1.0MHz		465		pF
Output capacitance	C _{oss}			99		pF
Reverse transfer capacitance	C _{rss}			76		pF
Turn-on Delay Time	t _{d(on)}	V _{DD} =10V, V _{GS} =4.5V I _D =1A, R _{GEN} =10Ω		8		ns
Turn-on Rise Time	t _r			17		ns
Turn-Off Delay Time	t _{d(off)}			19		ns
Turn-Off Fall Time	t _f			12		ns
Drain Source Body Diode Characteristics						
Source Drain Diode Forward Voltage ⁽¹⁾	V _{SD}	I _S =2.8A, V _{GS} =0V		0.7	1.2	V
Diode forward current ⁽³⁾	I _S				4.5	A

Note :

- 1.Pulse Test: pulse width 300 μs, duty cycle 2%.
- 2.Guaranteed by design, not subject to production.
- 3.Surface mounted on FR4 board, t 10sec.

PARAMETER CHARACTERISTIC CURVE

Fig 1: Output Characteristics

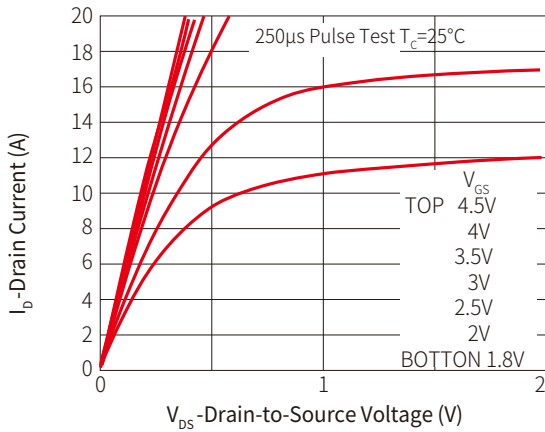


Figure 2: Transfer Characteristics

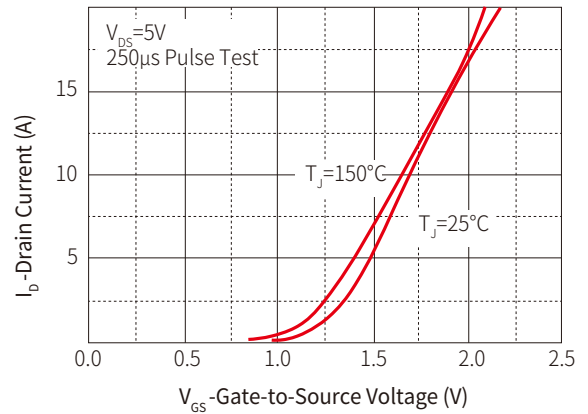


Figure 3: Threshold Voltage VS. Temperature

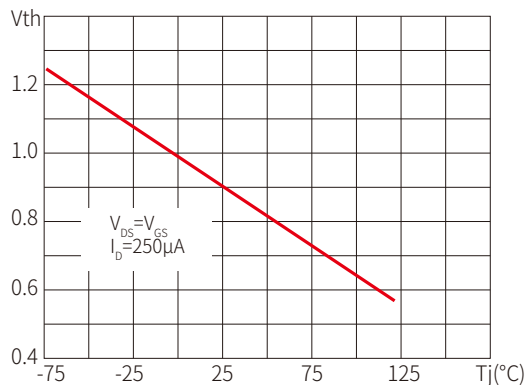


Figure 4: BVdss VS. Temperature

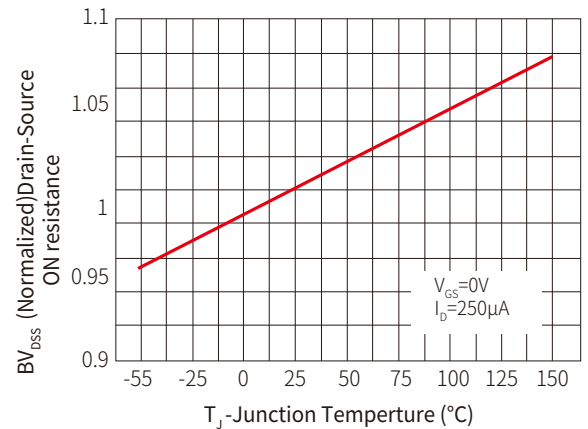


Figure 5: Rds(ON) VS. Temperature

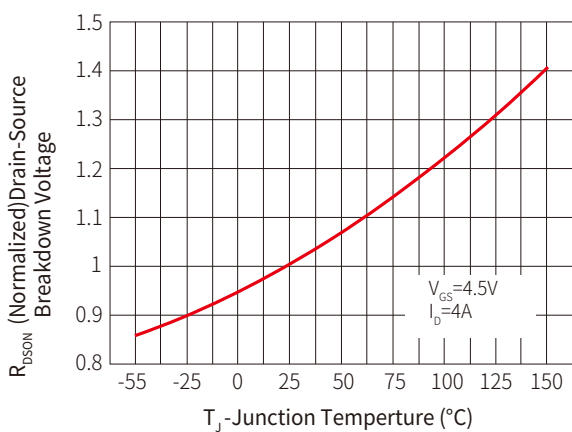


Figure 6: Source to Drain VS. Temperature

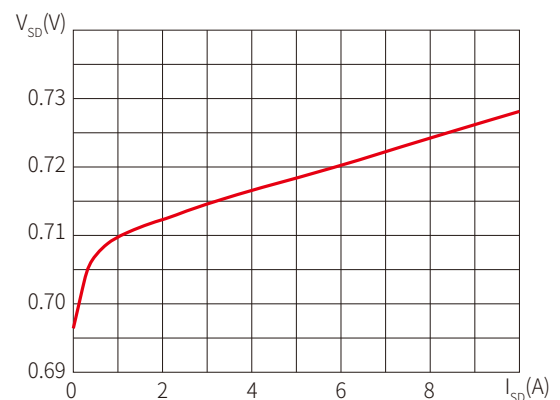
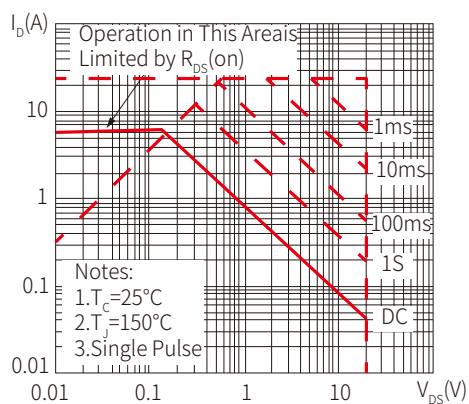
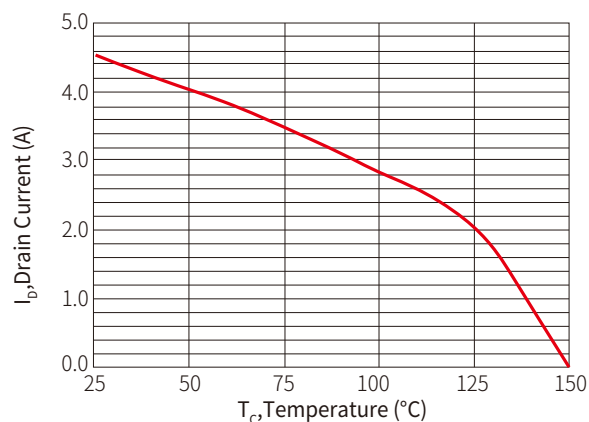
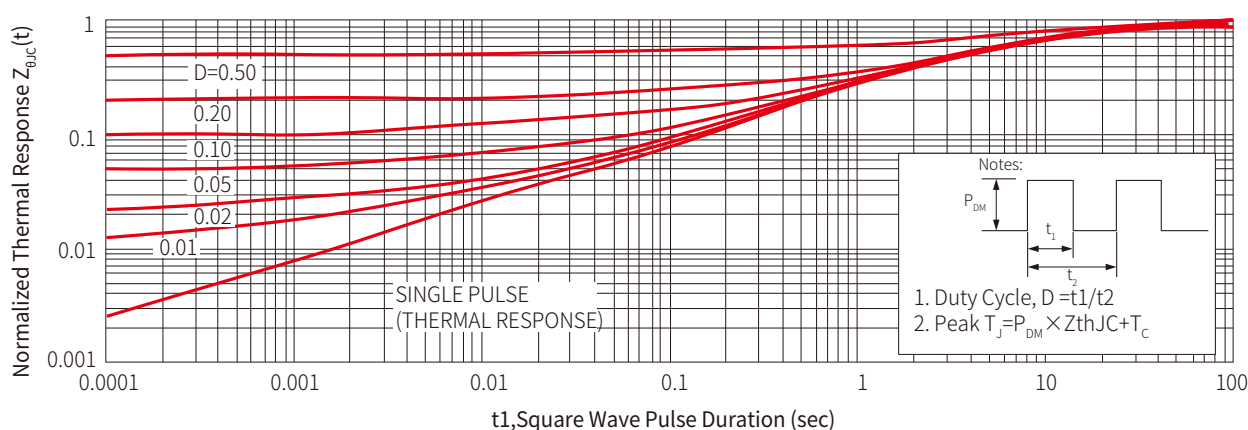
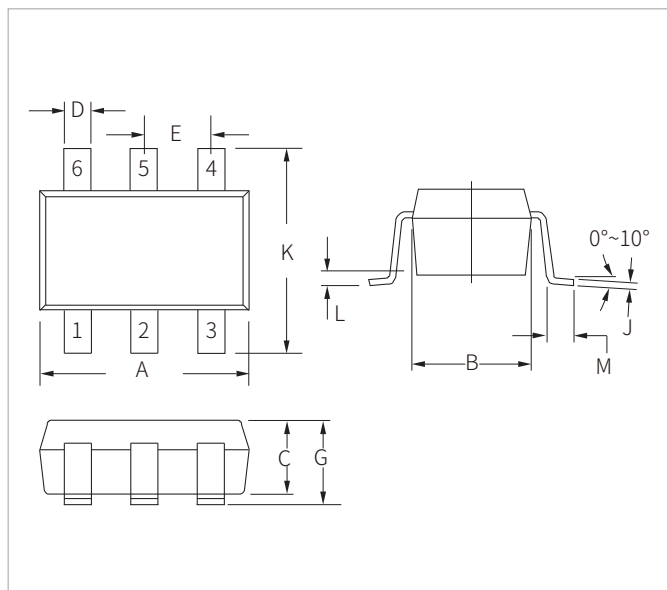


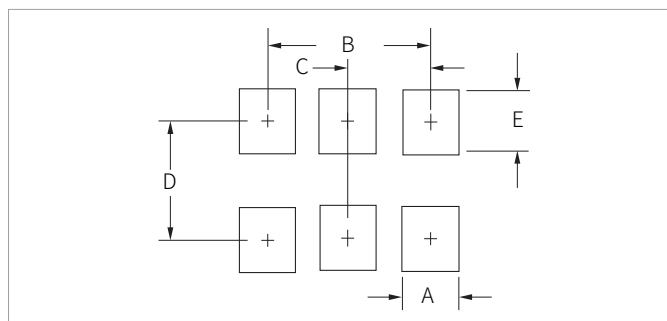
Figure 7: Safe Operating Area

Figure 8: Maximum Drain Current VS. Case Temperature

Figure 9: Normalized Thermal Transient Impedance


SOT-23-6L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.10	0.110	0.125
B	1.50	1.80	0.059	0.071
C	0.90	1.30	0.036	0.051
D	0.25	0.50	0.010	0.020
E	0.85	1.05	0.033	0.040
G	0.90	1.45	0.036	0.057
J	0.09	0.20	0.003	0.008
K	2.60	3.00	0.102	0.118
L	0.0	0.15	0.0	0.006
M	0.30	0.60	0.012	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
	Nominal	Nominal
A	0.70	0.028
B	1.90	0.074
C	0.95	0.037
D	2.40	0.094
E	1.00	0.039

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNM8205CS	SOT-23-6L	3000PCS	7"

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