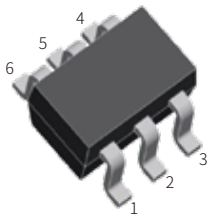
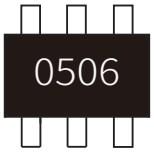
FEATURES

- V_{DS}<60V ,I_D=5.0A
- $R_{DS(ON)}$(at V_{GS}=10V)＜43mΩ
- $R_{DS(ON)}$(at V_{GS}=4.5V)＜47mΩ
- Low RDS(on) & FOM
- Extremely low switching loss
- Moisture Sensitivity Level 1
- Part no. with suffix “Q” means AEC-Q101 qualified
- Halogen Free



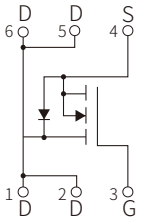
SOT-23-6



Marking

APPLICATION

- Power management
- Portable equipment



Schematic Symbol

APPROVALS

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

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	60	V
Drain Current	T_A=25°C	I_D	5	A
	T_A=100°C		3	
Pulsed Drain Current [A]		I_{DM}	20	A
Gate-source Voltage		V_{GSS}	±20	V
Total Power Dissipation [C]	T_A=25°C	P_D	1.25	W
	T_A=100°C		0.5	
Thermal Resistance Junction-to-Ambient Steady-State[D]		$R_{\theta JA}$	100	°C/W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to 150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Parameter						
Drain-source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250μA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250μA	1.0	1.5	2.5	V
Drain Cut-Off Current	I_{DSS}	V_{DS}=60V,V_{GS}=0V			1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±20V ,V_{DS}=0V			±100	nA
Drain Source ON Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=5A		27	43	mΩ
		V_{GS}=4.5V,I_D=4A		30	47	mΩ
Diode Forward Voltage	V_{SD}	I_S=5A,V_{GS}=0V		0.85	1.2	V
Gate resistance	R_G	f=1MHz		10		Ω
Dynamic Parameters						
Input capacitance	C_{iss}	V_{GS}=0V,V_{DS}=30V, f=1MHz		1170		pF
Output capacitance	C_{oss}			64.4		pF
Reverse transfer capacitance	C_{rss}			54.9		pF
Switching Parameters						
Total Gate Charge	Q_g	V_{DS}=30V,V_{GS}=10V,I_D=5A		23.4		nC
Gate-Source Charge	Q_{gs}			2.1		nC
Gate-Drain Charge	Q_{gd}			6.1		nC
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=30V,V_{GS}=10V I_D=5A,R_{GEN}=3Ω		3.0		ns
Turn-on Rise Time	t_r			28.2		ns
Turn-Off Delay Time	$t_{d(off)}$			25.6		ns
Turn-Off Fall Time	t_f			2.53		ns
Reverse Recovery Charge	Q_{rr}	I_F=5A, di/dt=100A/us		44.7		nC
Reverse Recovery Time	t_{rr}			19.0		ns

Notes:
A. Repetitive rating; pulse width limited by max. junction temperature.
B. P_d is based on max. junction temperature, using junction-case and junction-ambient thermal resistance.
C. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2
FR-4 board with 2oz. Copper, in the still air environment with T_A =25°C.
The maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.

PARAMETER CHARACTERISTIC CURVE

Figure 1: Output Characteristics

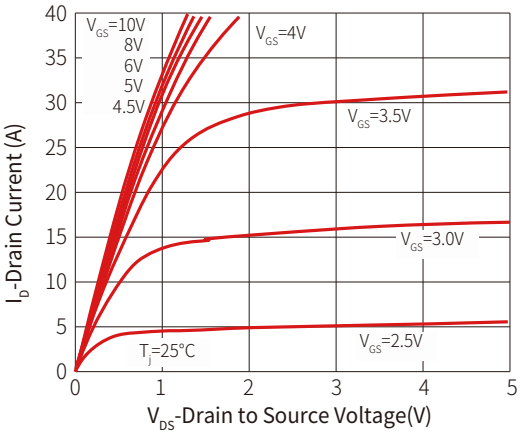


Figure 2: Transfer Characteristics

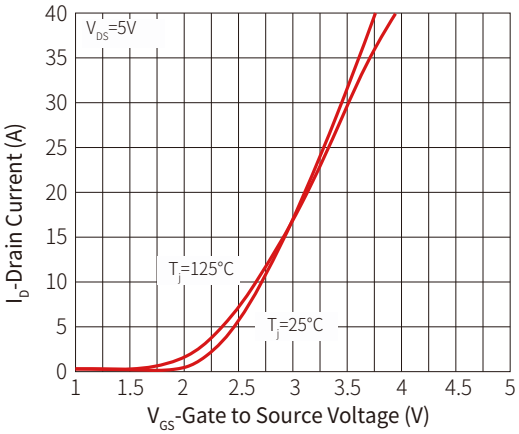


Figure 3:Capacitance Characteristics

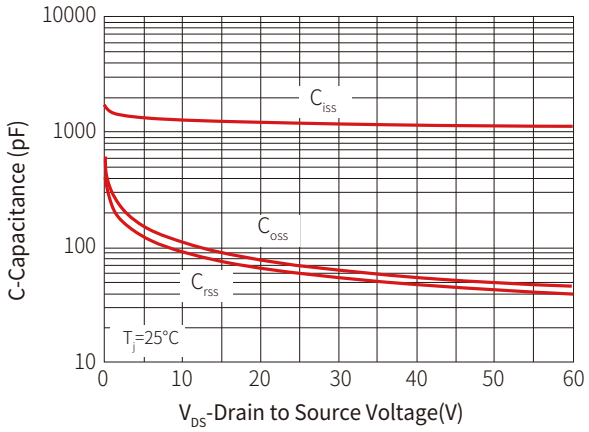


Figure 4:Gate Charge

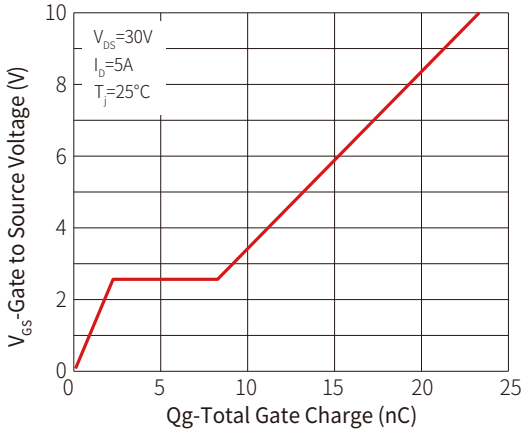


Figure 5:On-Resistance vs Gate to Source Voltage

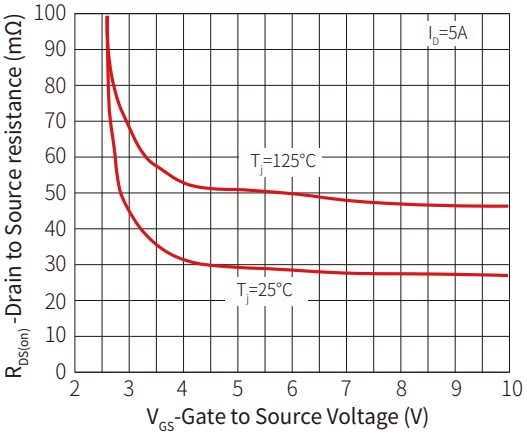


Figure 6:Normalized On-Resistance

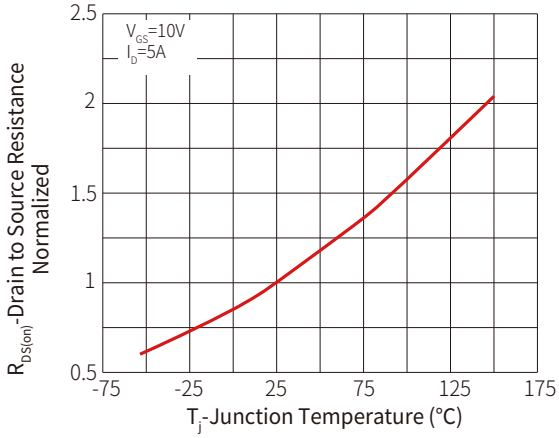


Figure 7: $R_{DS(on)}$ VS Drain Current

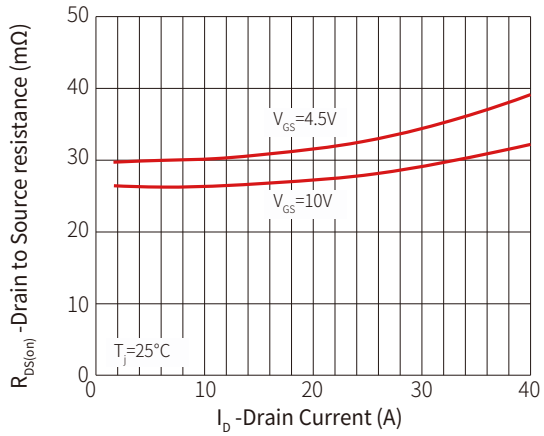


Figure 8: Forward characteristics of reverse diode

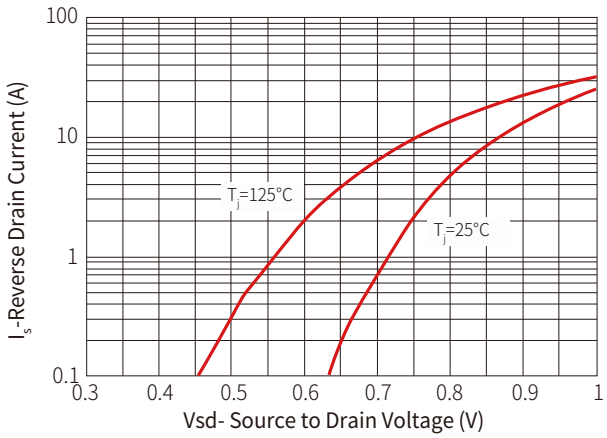


Figure 9: Normalized breakdown voltage

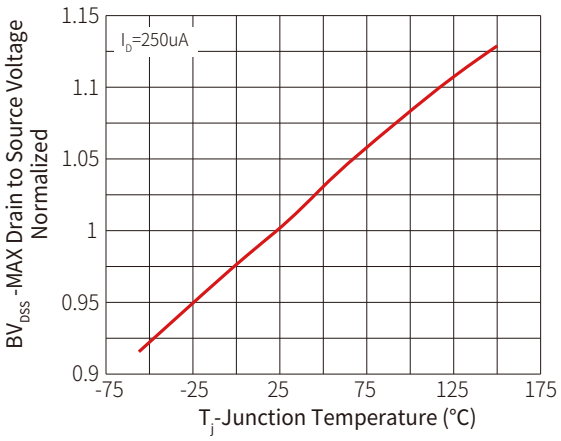


Figure 10: Normalized Threshold voltage

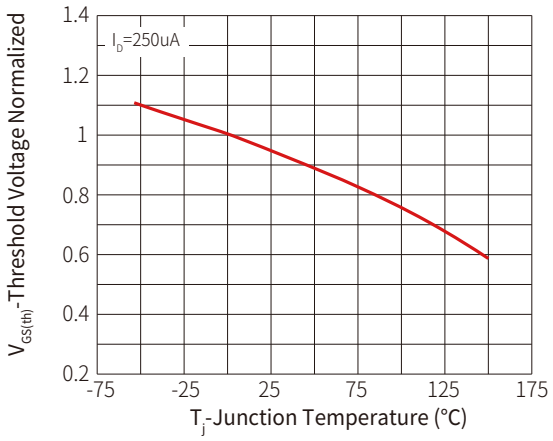


Figure 11: Maximum Transient Thermal Impedance

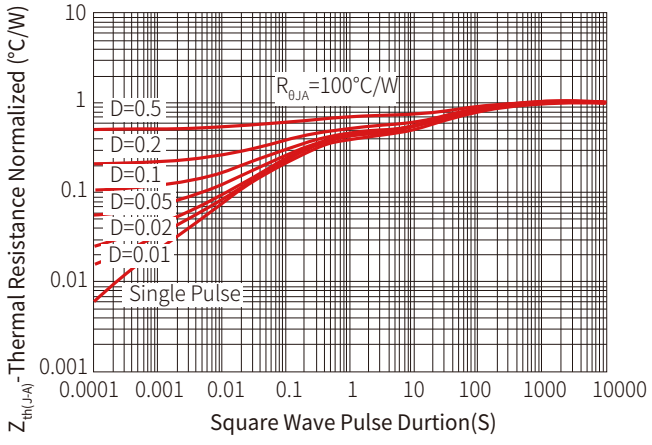
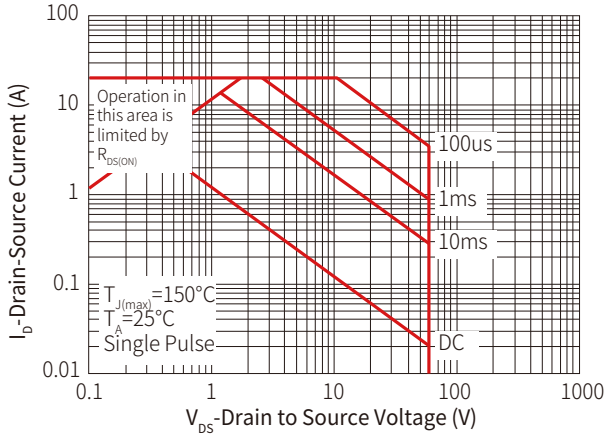
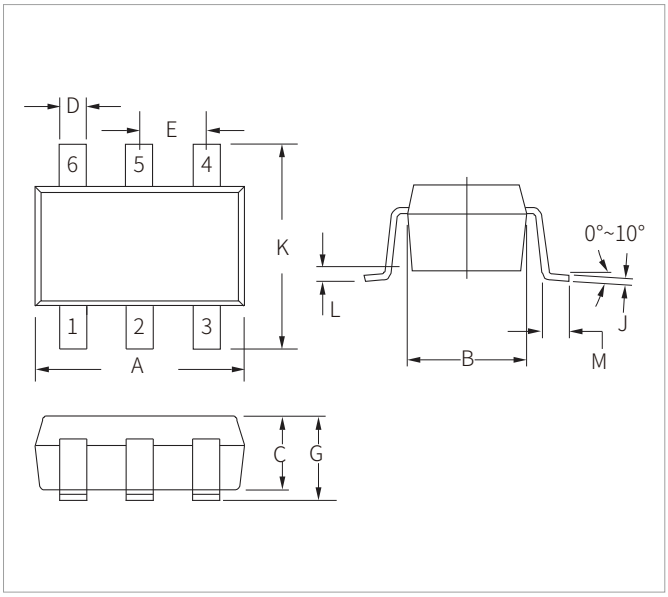


Figure 12: Safe Operation Area

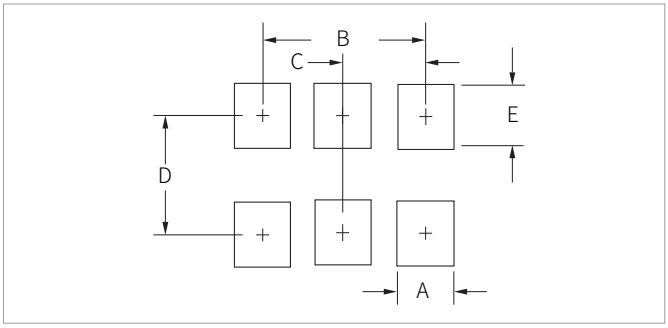


SOT-23-6 PACKAGE INFORMATION



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
SNM05N06AQ	SOT-23-6	3000PCS	7”

Headquarters
No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline
400-021-5756

Web
Https://www.semiware.com

Sales Center
Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service
Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support
Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions
Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code
Website
Wechat

To find your local partner within Semiware' s global website: www.semiware.com