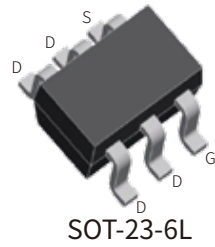


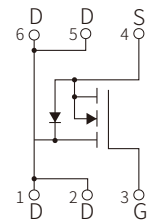
FEATURES

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



APPLICATION

- | Power management
- | Portable equipment



Schematic Symbol

APPROVALS

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

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

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

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_{θJA} is measured with the device mounted on 1 in²

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

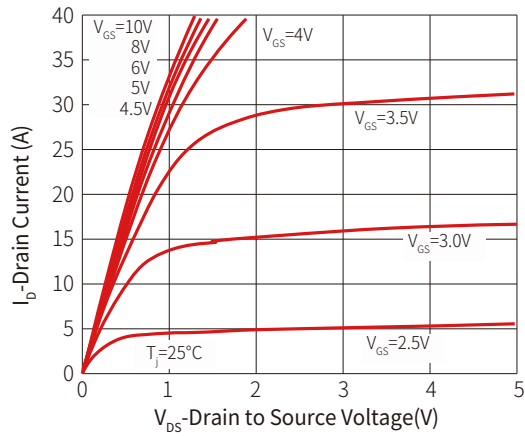


Figure 2: Transfer Characteristics

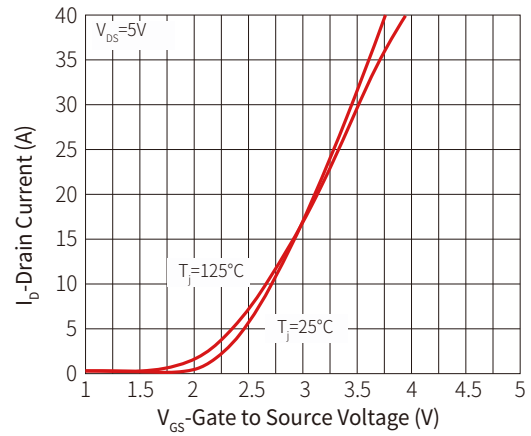


Figure 3: Capacitance Characteristics

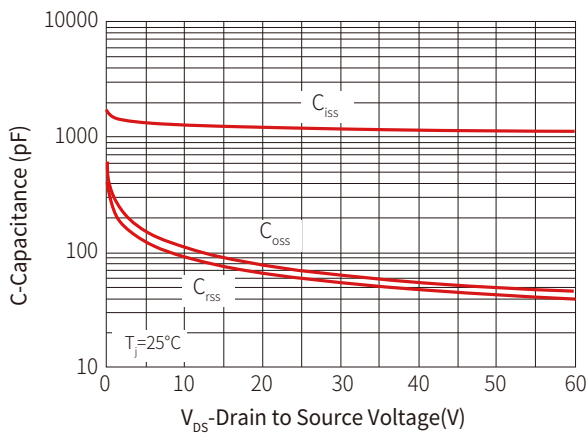


Figure 4: Gate Charge

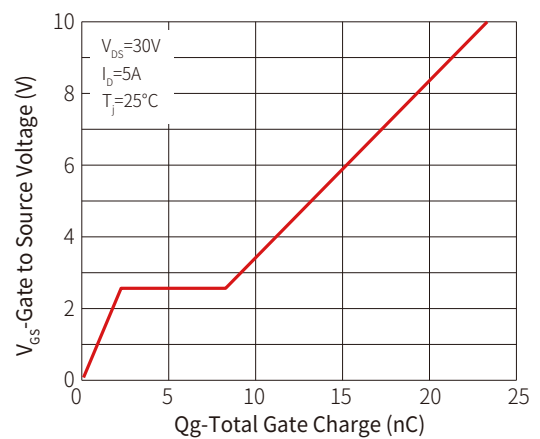


Figure 5: On-Resistance vs Gate to Source Voltage

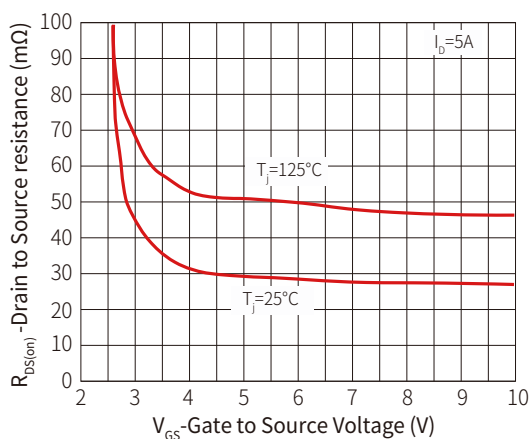


Figure 6: Normalized On-Resistance

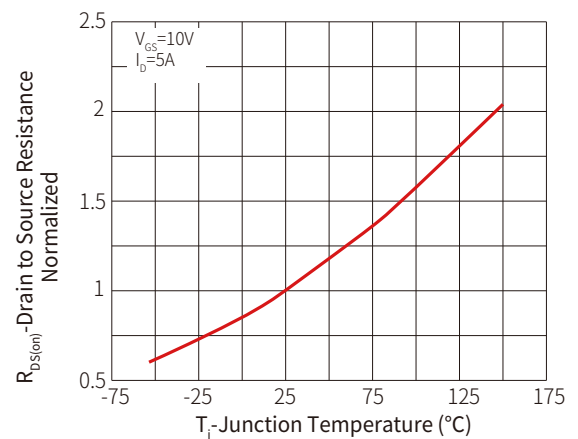
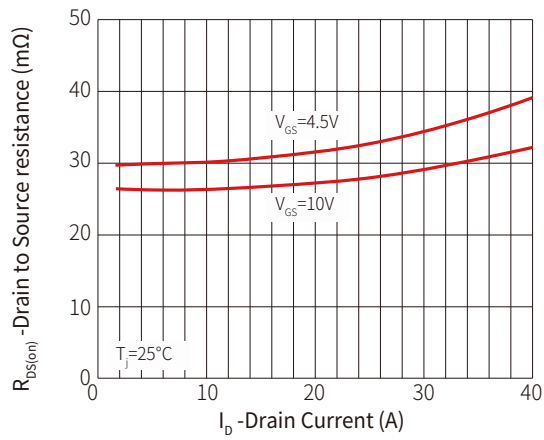
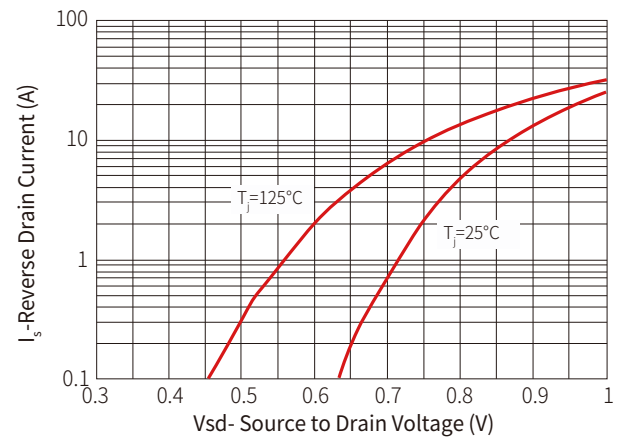
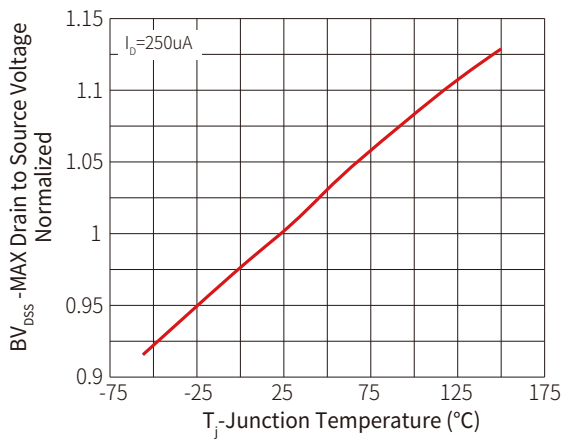
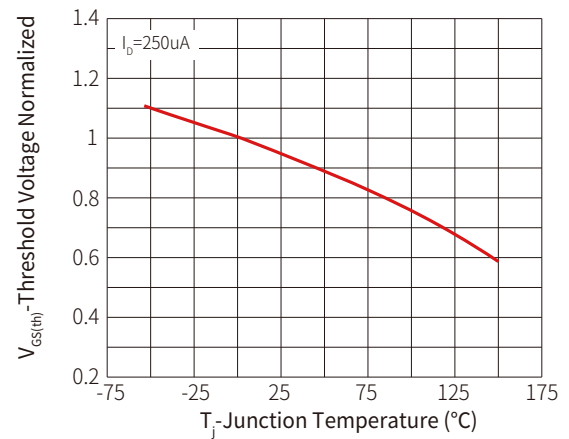
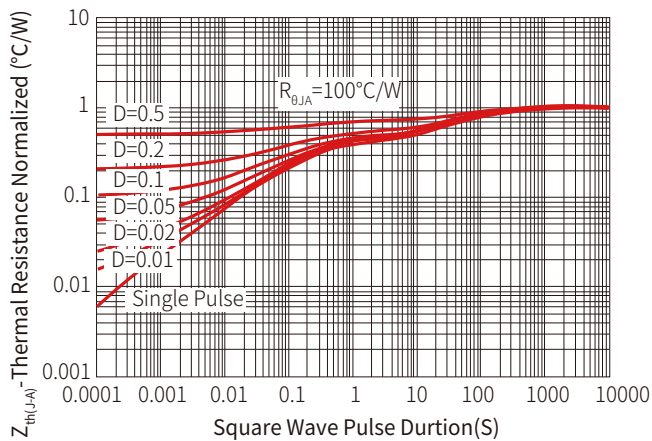
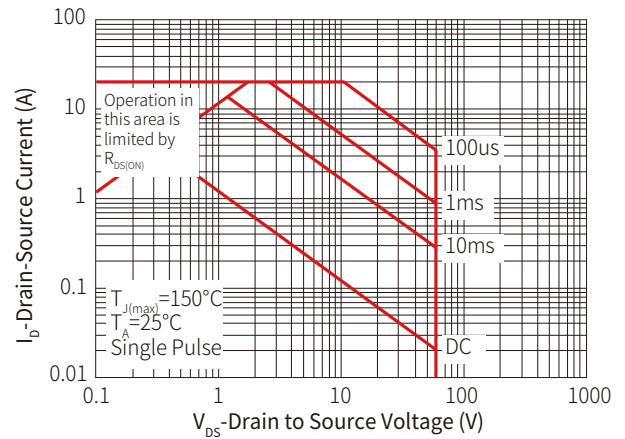
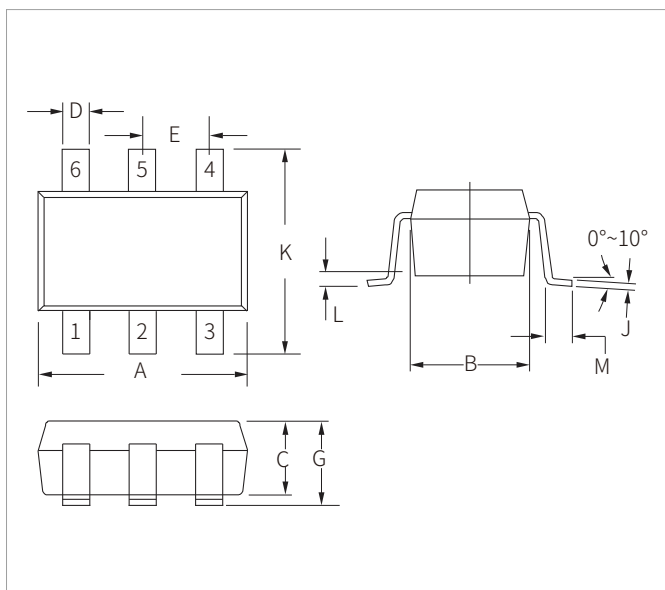


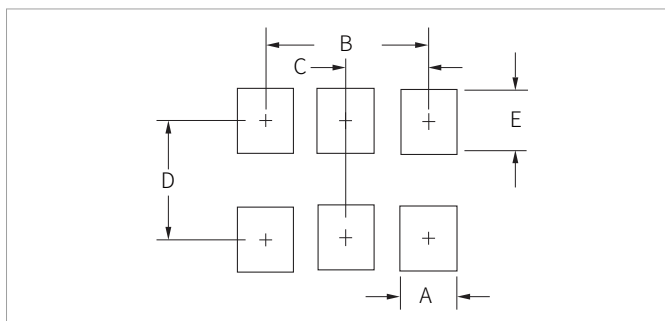
Figure 7: $R_{DS(on)}$ VS Drain Current

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-23-6L 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
SNM05N06AQ	SOT-23-6L	3000PCS	7"

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