

FEATURES

V_{DS} (V) = 30V, I_D = 5.8 A (V_{GS} = 10V)

$R_{DS(ON)}$ < 32m Ω (V_{GS} = 10V)

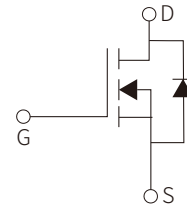
$R_{DS(ON)}$ < 36m Ω (V_{GS} = 4.5V)

$R_{DS(ON)}$ < 56m Ω (V_{GS} = 2.5V)

Meet AEC-Q101 Requirements



Marking



Schematic Symbol

APPLICATION

This device is suitable for use as a load switch or in PWM applications, Meet the stringent requirements of automotive applications

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_{DS}	30	V
Drain Current-Continuous	I_D	5.8	A
Drain Current-Continuous	$I_D(T_a=70^\circ\text{C})$	4.9	A
Pulsed Drain Voltage	I_{DM}	30	A
Gate-Source Voltage	V_{GS}	± 12	V
Total Power Dissipation	P_D	1.4	W
Total Power Dissipation	$P_D(T_a=70^\circ\text{C})$	1.0	W
Operating and Storage Junction Temperature	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS(T_a=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
		V _{DS} =24V, V _{GS} =0V, T _J =55°C			5	μA
Gate-Body Leakage	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			±0.1	μA
On-State Drain Current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =5V	30			A
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.65	1.1	1.45	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =5.8A		29	32	mΩ
		V _{GS} =10V, I _D =5.8A, T _J =125°C			39	
		V _{GS} =4.5V, I _D =5A		32	36	
		V _{GS} =2.5V, I _D =4A		40	56	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =5A	10	15		S
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1A		0.77	1	V
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, F=1.0MHz		823	1030	pF
Output Capacitance	C _{oss}			99		
Reverse Transfer Capacitance	C _{rss}			77		
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V, R _L =2.7Ω V _{DS} =15V, R _{GEN} =3Ω		3.3	5	ns
Turn-On Rise Time	t _r			4.8	7	
Turn-Off Delay Time	t _{d(off)}			26.3	40	
Turn-Off Fall Time	t _f			4.1	6	
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, F=1.0MHz		1.2	3.6	Ω
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =15V, I _D =5.8A		9.7	12	nC
Gate Source Charge	Q _{gs}			1.6		
Gate Drain Charge	Q _{gd}			3.1		
Body Diode Reverse Recovery Time	t _{rr}	I _F =5A, di/dt=100A/μs		16	20	ns
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =5A, di/dt=100A/μs		8.9	12	nC

PARAMETER CHARACTERISTIC CURVE

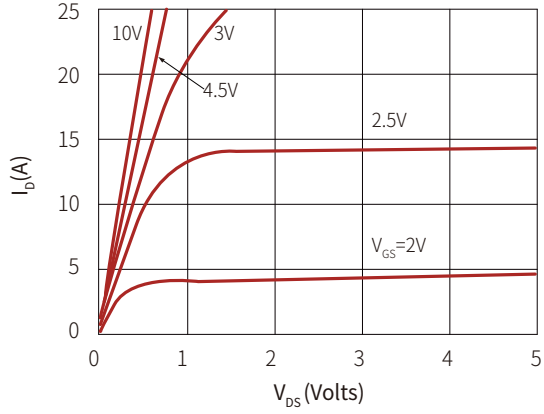
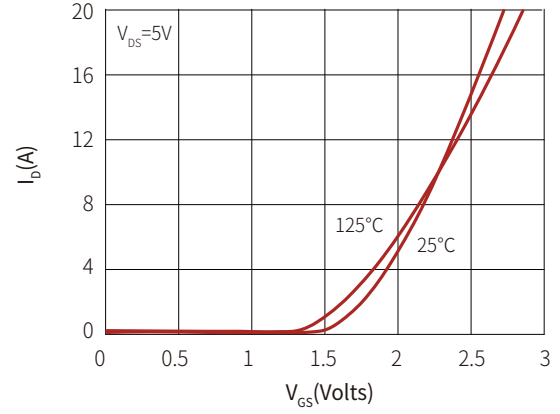
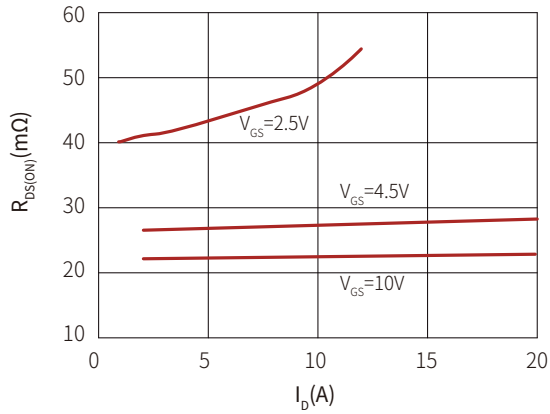
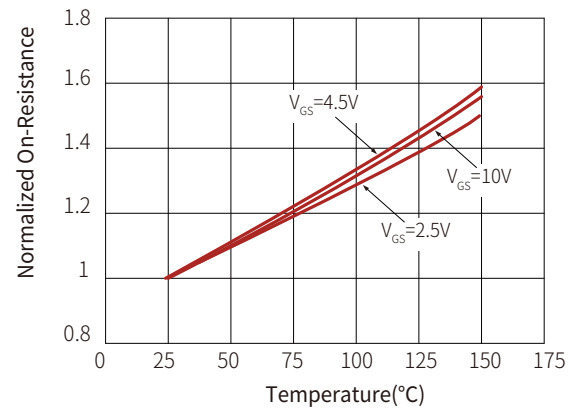
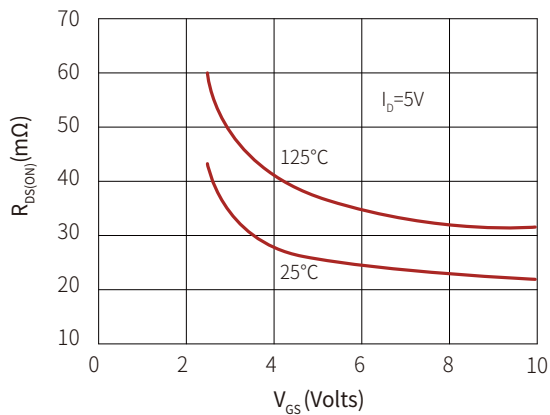
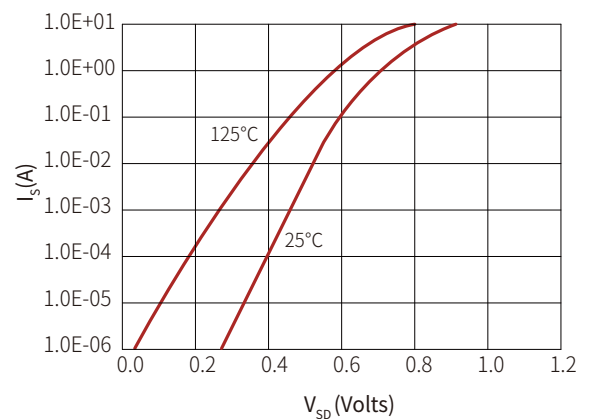
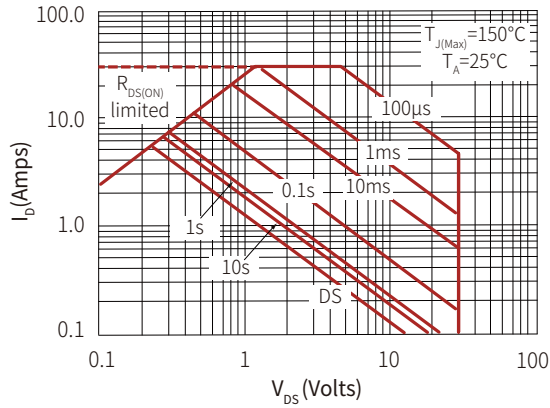
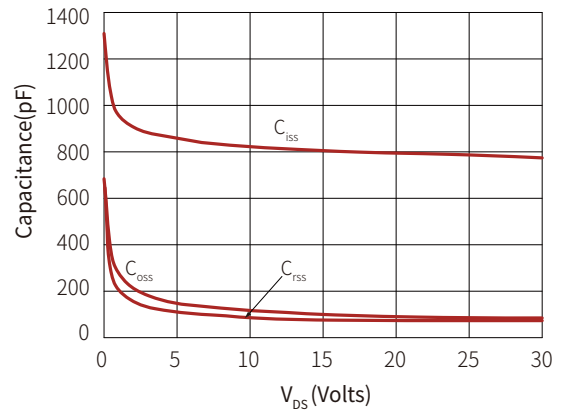
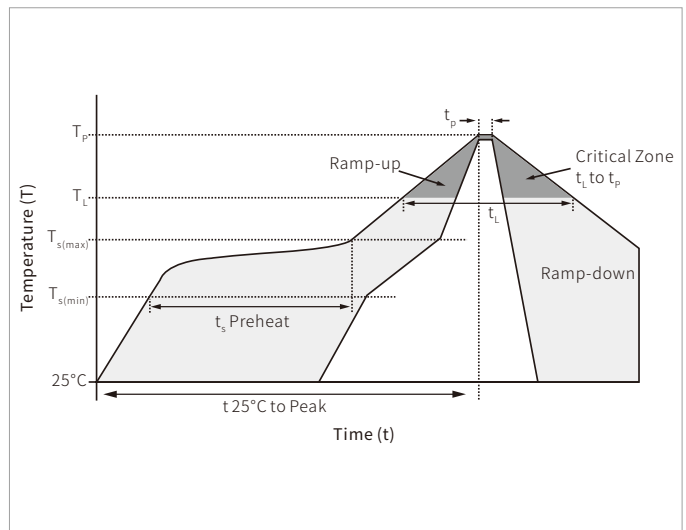
Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6


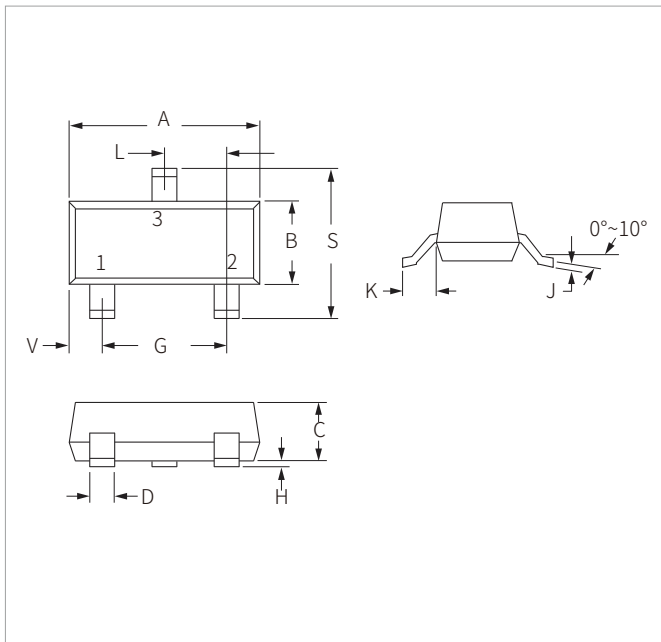
Figure 7

Figure 8


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak $T_{s(max)}$ to T_L - Ramp-up Rate)		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_r)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

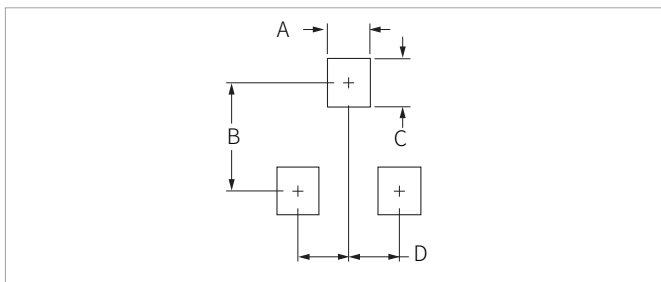


SOT-23-3L PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.15	0.110	0.124
B	1.50	1.70	0.060	0.070
C	1.00	1.30	0.039	0.051
D	0.37	0.50	0.015	0.020
G	1.78	2.10	0.070	0.083
H	0.01	0.15	0.001	0.006
J	0.08	0.18	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.60	3.00	0.102	0.118
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.70	1.00	0.028	0.039
B	2.30	2.50	0.090	0.098
C	0.70	1.00	0.028	0.039
D	0.80	1.10	0.032	0.043

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNM3400Q	SOT-23-3L	3000PCS	7"

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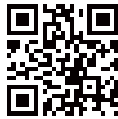
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By QR Code

Website



Wechat

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