

## FEATURES

- | Sensitive Gate Trigger Current And Low Holding Current
- | ESD Protected up to 2kV



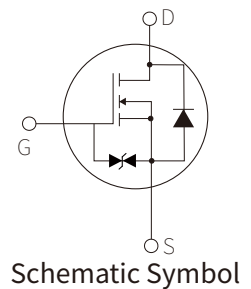
## APPLICATION

- | Intended For Use In General Purpose Switching And Phase Control Applications



## APPROVALS

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



## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C )

Parameter	Symbol	Value	Unit	
Drain-Source Voltage	V <sub>DSS</sub>	20	V	
Gate-Source Voltage	V <sub>GSS</sub>	±8	V	
Drain Current – Continuous	I <sub>D</sub>	0.75	A	
Pulsed Drain Current	I <sub>DM</sub>	3	A	
Power Dissipation	P <sub>D</sub>	200	mW	
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-50 to +150	°C	
Thermal resistance, junction - ambient	R <sub>θJA</sub>	t ≤ 10s	450	°C/W
		Steady-State	570	°C/W

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA	20	22.9		V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			10	μA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	μA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.3	0.68	1	V
Static Drain-Source On-Resistance	R <sub>DS(on)(1)</sub>	V <sub>GS</sub> =2.5V, I <sub>D</sub> =200mA		273	400	mΩ
	R <sub>DS(on)(2)</sub>	V <sub>GS</sub> =1.8V, I <sub>D</sub> =100mA		353	750	mΩ
	R <sub>DS(on)(3)</sub>	V <sub>GS</sub> =1.5V, I <sub>D</sub> =50mA		442		mΩ
	R <sub>DS(on)(4)</sub>	V <sub>GS</sub> =1.2V, I <sub>D</sub> =20mA		733		mΩ
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		60		Ω
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =250mA, V <sub>GS</sub> =0V		0.86	1.2	V
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1.0MHz		105		pF
Output Capacitance	C <sub>oss</sub>			65		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			20		pF
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =0.4A		0.85		nC
Gate Source Charge	Q <sub>gs</sub>			0.1		nC
Gate Drain Charge	Q <sub>gd</sub>			0.25		nC
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =10V, R <sub>L</sub> =25Ω R <sub>GEN</sub> =3Ω		2		ns
Turn-On Rise Time	t <sub>r</sub>			4		ns
Turn-Off Delay Time	t <sub>d(off)</sub>			18		ns
Turn-Off Fall Time	t <sub>f</sub>			8		ns

# CHARACTERISTIC CURVES

Figure 1: On-Region Characteristics

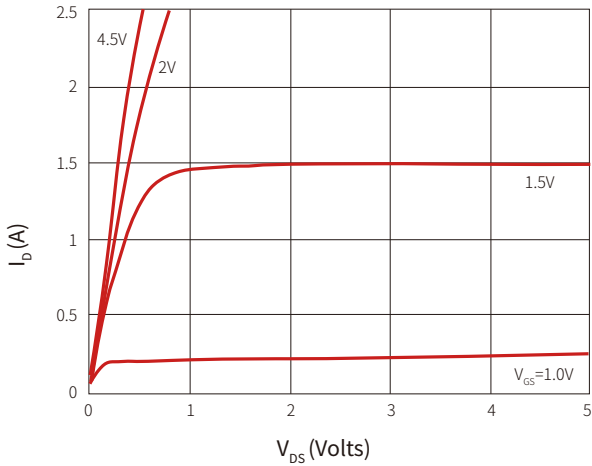


Figure 2: Transfer Characteristics

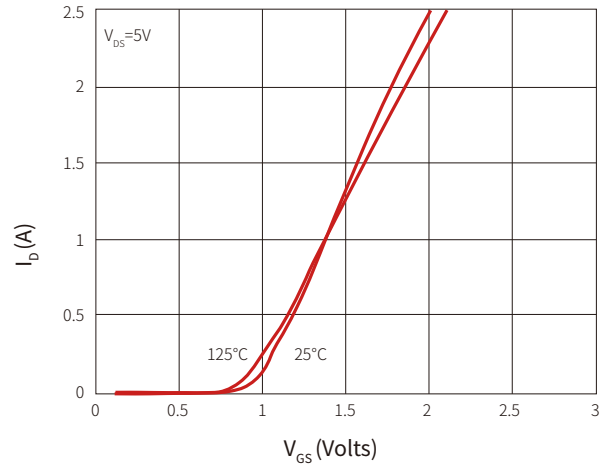


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

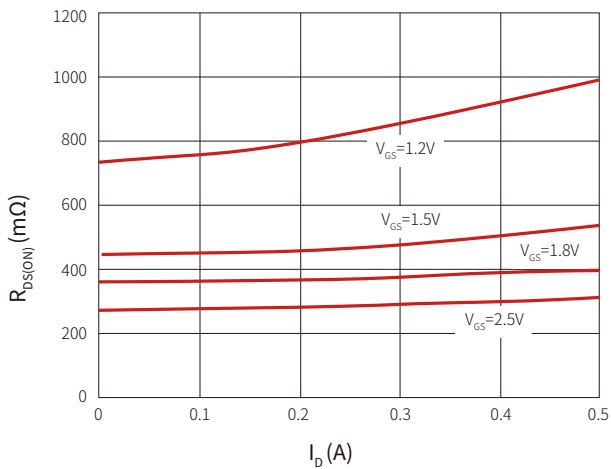


Figure 4: On-Resistance vs. Junction Temperature

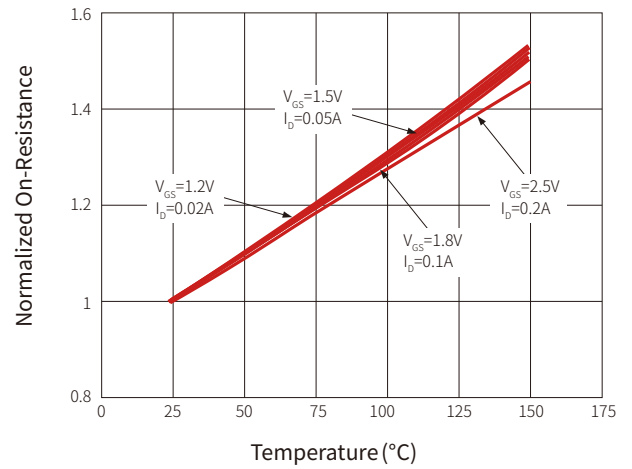


Figure 5: On-Resistance vs. Gate-Source Voltage

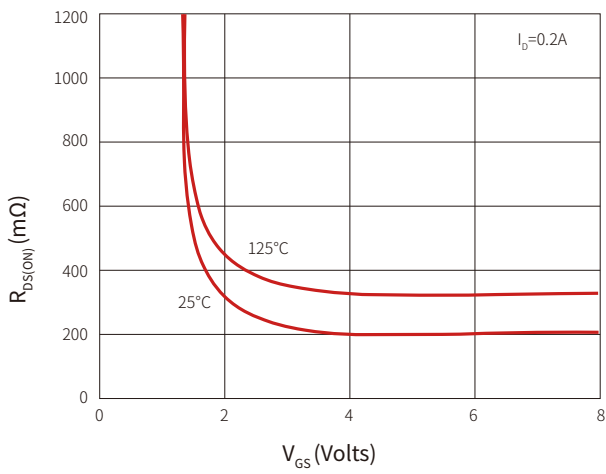


Figure 6: Body-Diode Characteristics

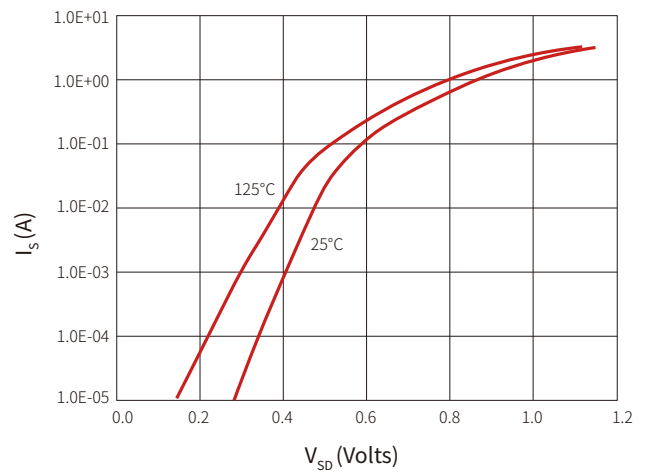


Figure 7: Gate-Charge Characteristics

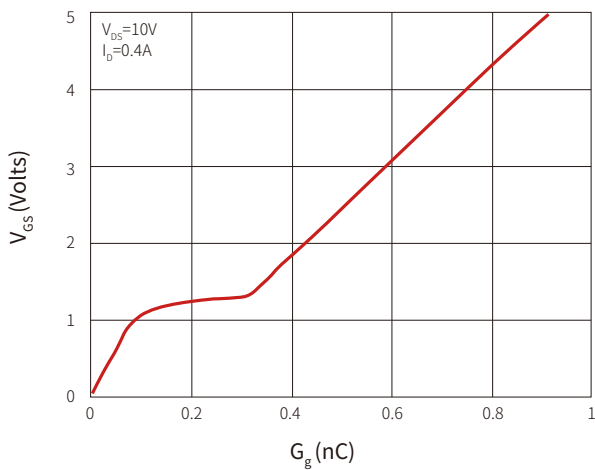


Figure 8: Capacitance Characteristics

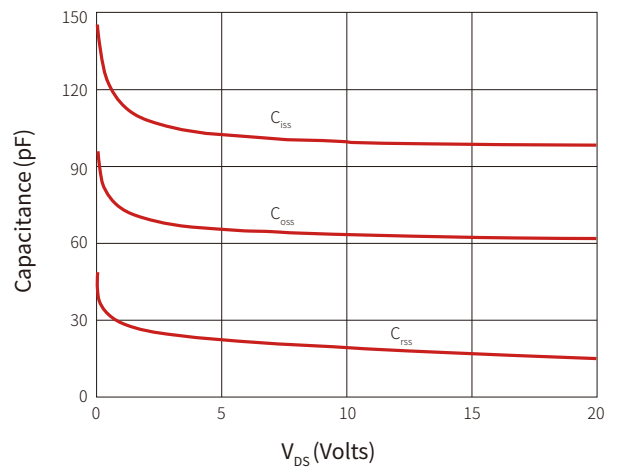
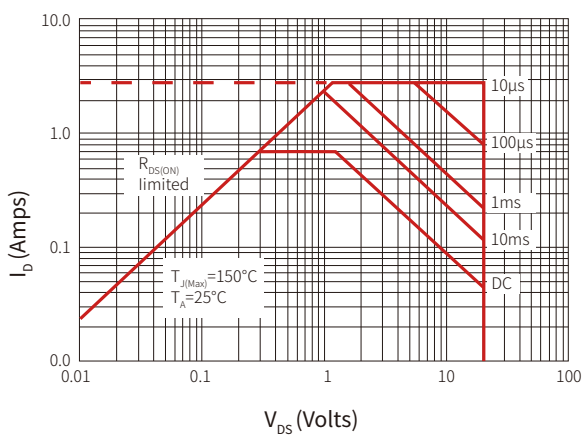
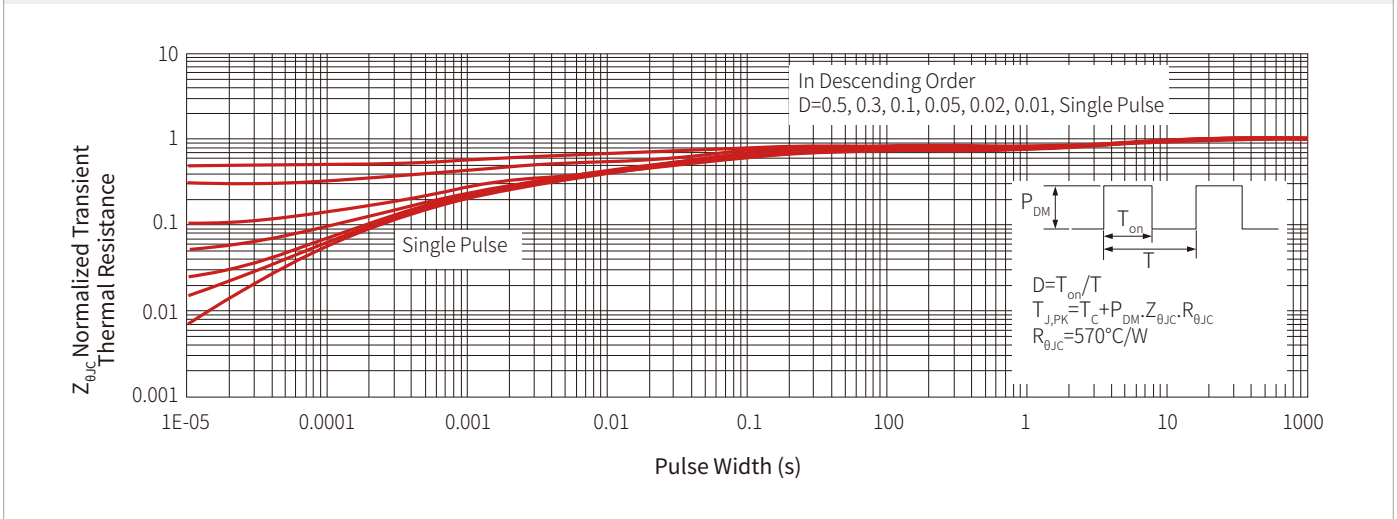


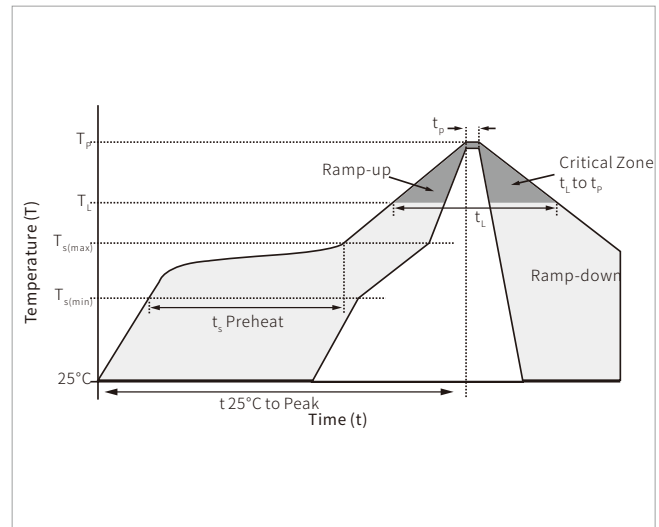
Figure 9: Maximum Forward Biased Safe Operating Area



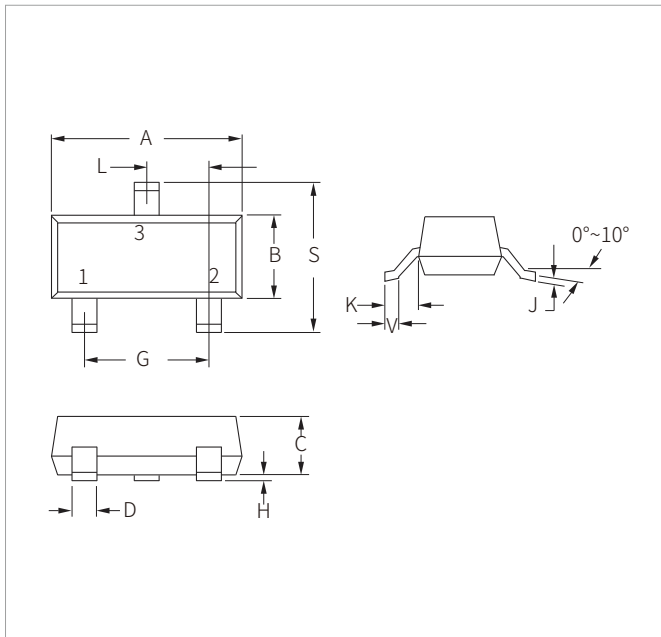
**Figure 10: Normalized Maximum Transient Thermal Impedance**


## 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)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_L$ )	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

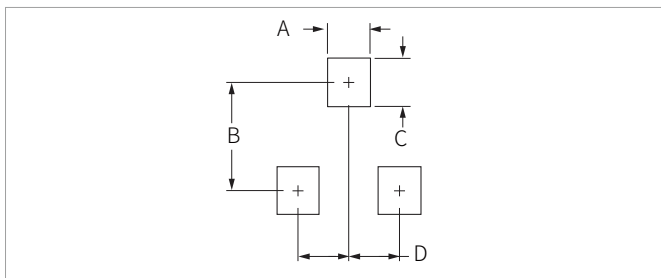


## SOT-323 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.30	0.075	0.091
B	1.10	1.40	0.043	0.055
C	0.85	1.05	0.033	0.041
D	0.20	0.40	0.008	0.016
G	1.20	1.40	0.047	0.055
H	0.00	0.10	0.000	0.004
J	0.08	0.15	0.003	0.006
K	0.525REF		0.021REF	
L	0.650TYP		0.026TYP	
S	2.10	2.50	0.083	0.098
V	0.26	0.46	0.010	0.018

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	NOR		NOR	
A	0.50		0.020	
B	2.20		0.087	
C	0.80		0.031	
D	1.30		0.051	

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNM3134W	SOT-323	3000PCS	7"

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