

FEATURES

$V_{DS}=100V$ $I_D=5A$

$R_{DS(on)}$ @10V $\leq 144m\Omega$ (Typ.120m Ω)

$R_{DS(on)}$ @4.5V $\leq 164m\Omega$ (Typ.126m Ω)



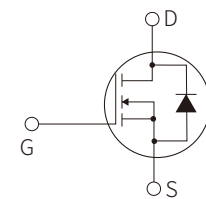
APPLICATION

Power management in TV Inverter. Power Switch



APPROVALS

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



Schematic Symbol

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	100	V
Drain Current- Pulsed	I_{DM}	15	A
Maximum Drain Current - Continuous	I_D	5.0	A
Gate-Source Voltage	V_{GSS}	± 20	V
Power Dissipation	P_D	1.55	W
Maximum Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}C$
Maximum Resistance – Junction to Ambient	$R_{\theta JA}$	80.7	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.7	2.3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5.0A$		120	144	m Ω
		$V_{GS}=4.5V, I_D=3.0A$		126	164	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_F=1A$			1.3	V
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$		200		pF
Output Capacitance	C_{oss}			150		
Reverse Transfer Capacitance	C_{rss}			30		
Turn-On Delay Time	$t_{d(on)}$	$I_{DS}=1A, V_{GEN}=10V$ $V_{DD}=30V, R_L=30\Omega$ $R_G=6\Omega$		11		ns
Turn-On Rise Time	t_r			10		
Turn-Off Delay Time	$t_{d(off)}$			21		
Turn-Off Fall Time	t_f			5		
Total Gate Charge	$Q_{g(4.5V)}$	$V_{GS}=10V, V_{DS}=50V, I_{DS}=5A$		9.5		nC
Gate Source Charge	Q_{gs}			1.9		
Gate Drain Charge	Q_{gd}			2.1		

PARAMETER CHARACTERISTIC CURVE

Figure1: Power Capability

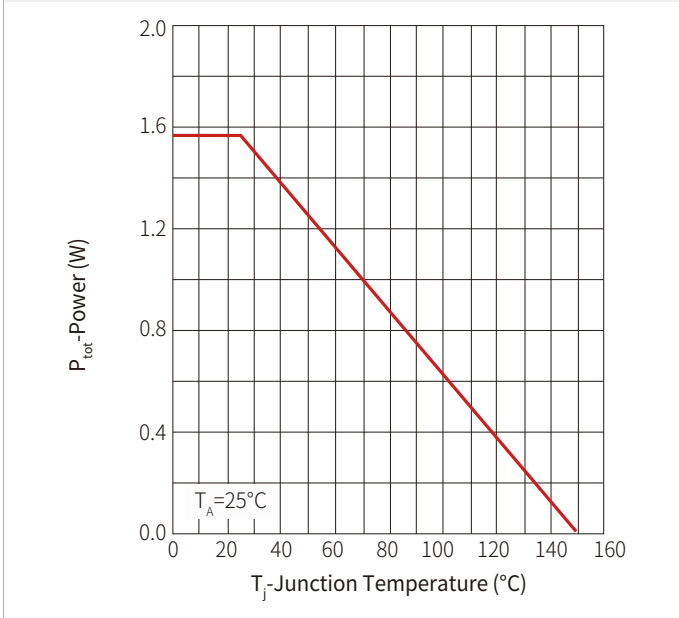


Figure2: Drain Current

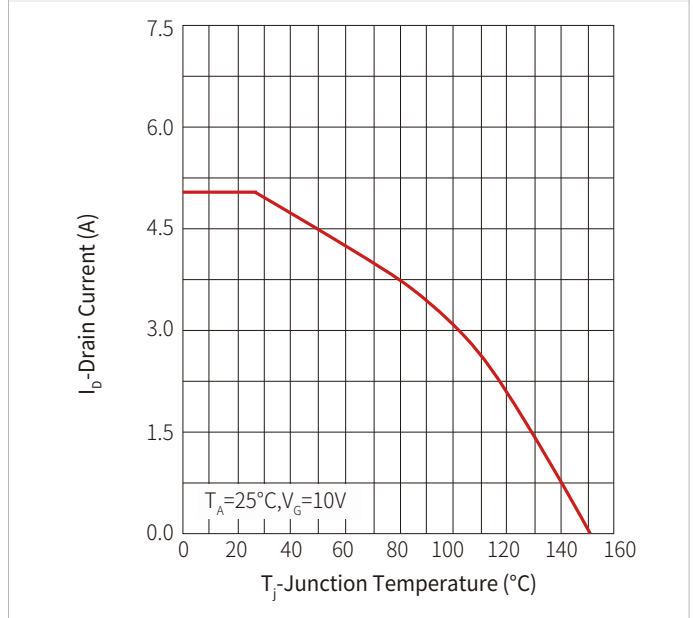


Figure3: Safe Operation Area

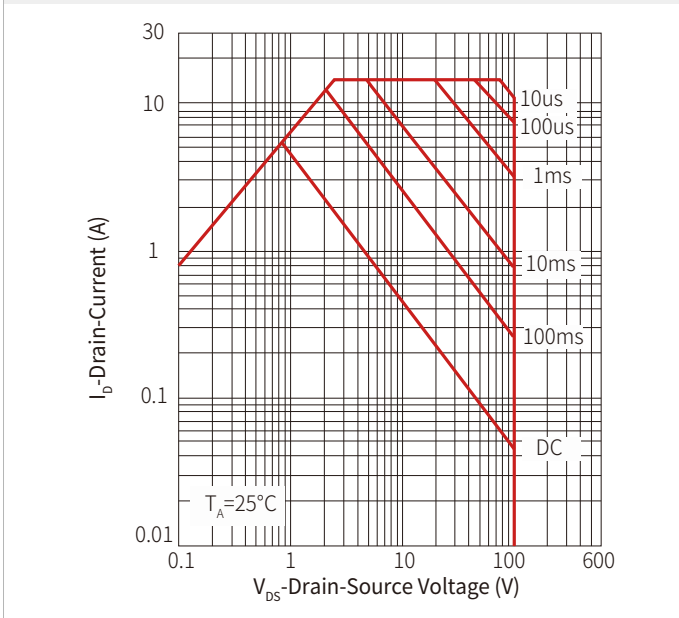


Figure 4: Transient Thermal Impedance

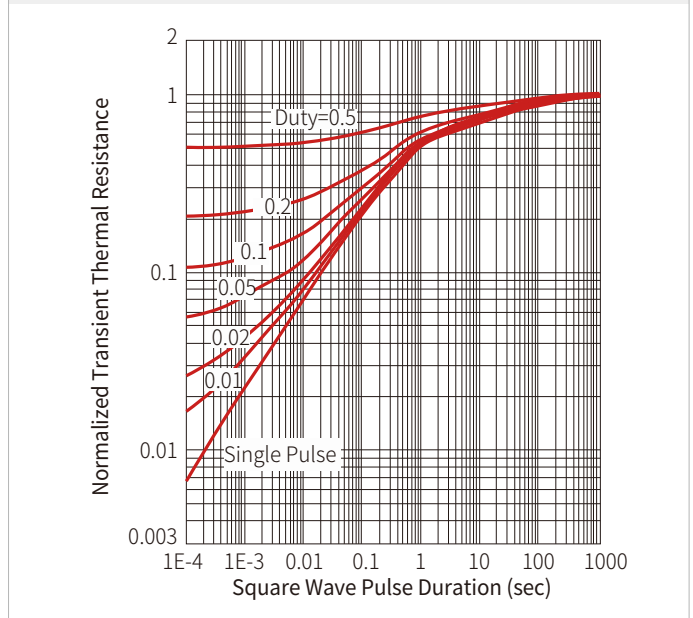


Figure 5: Output Characteristics

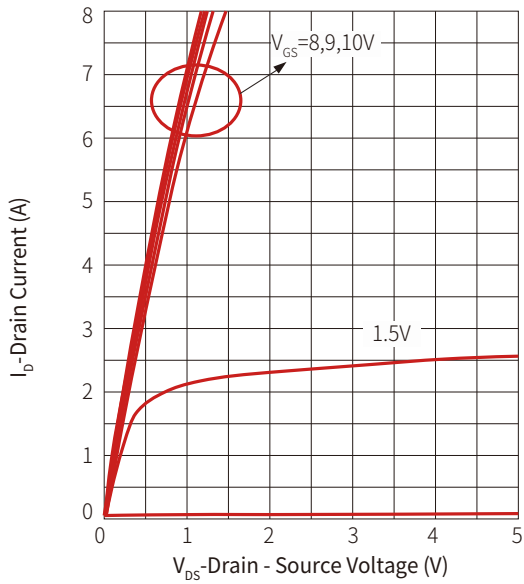


Figure 6: Drain-Source On Resistance

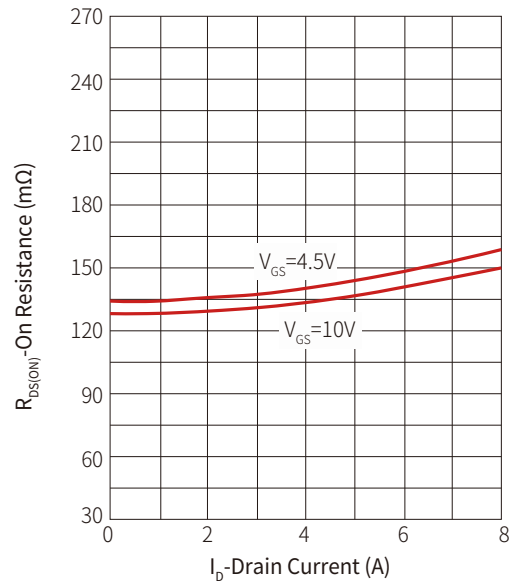


Figure 7: Gate-Source On Resistance

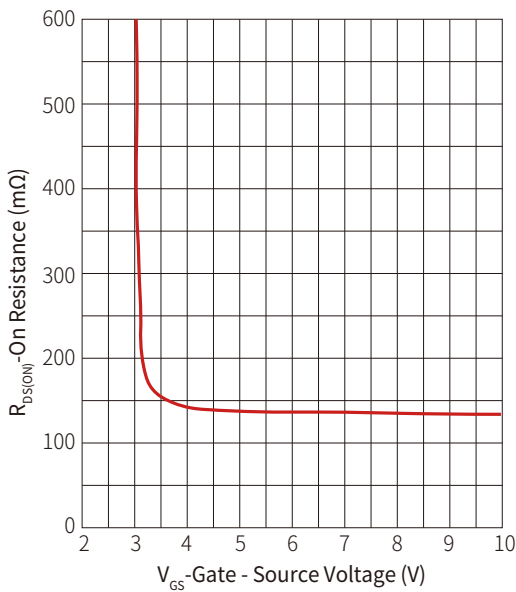


Figure 8: Gate Threshold Voltage

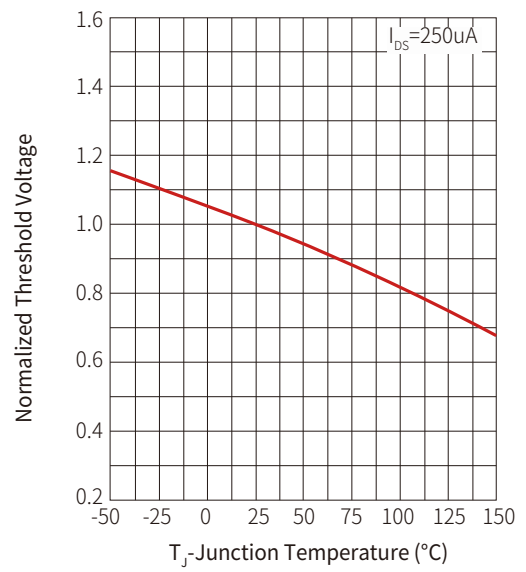


Figure 9: Drain-Source On Resistance

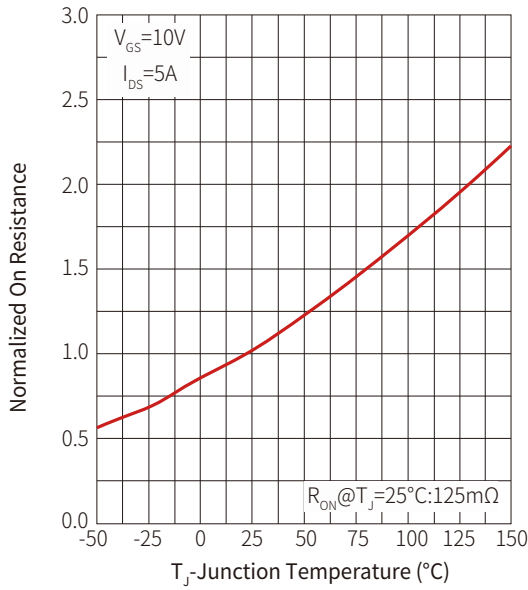


Figure 10: Source-Drain Diode Forward

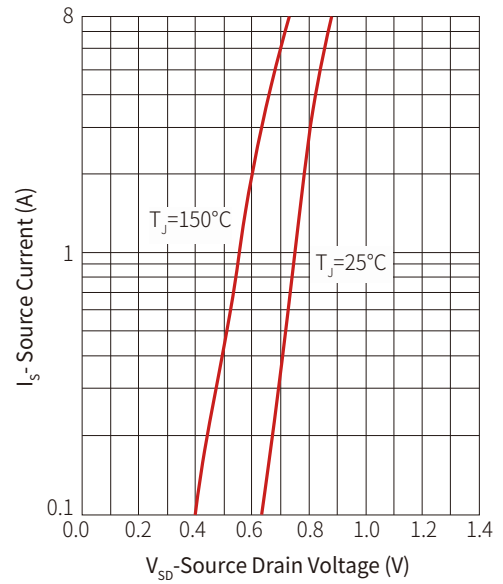


Figure 11: Capacitance

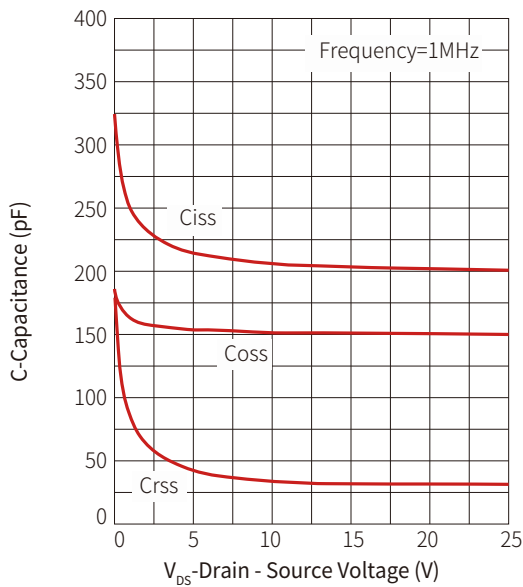
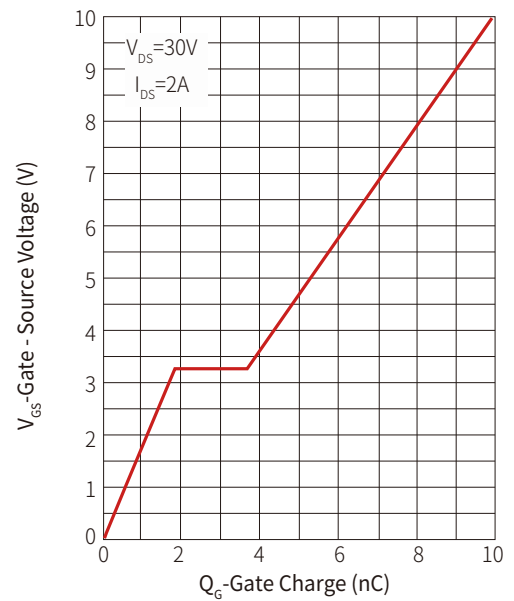
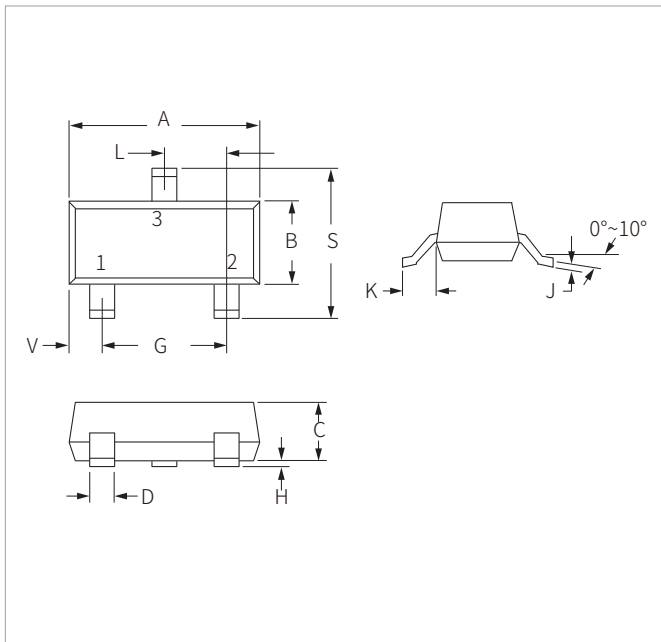


Figure 12: Gate Charge

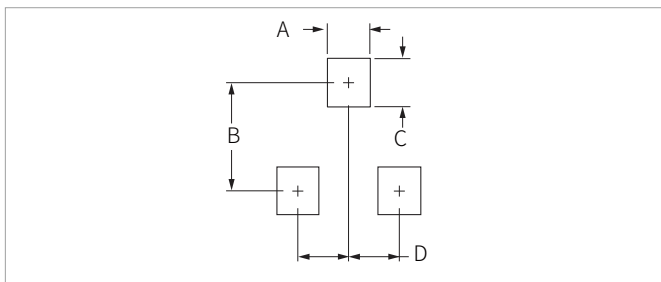


SOT-23-3L PACKAGE INFORMATION



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
SNM5N10A	SOT-23-3L	3000PCS	7"

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