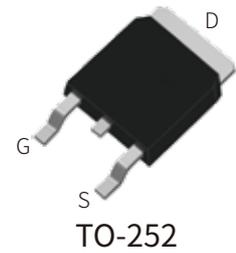


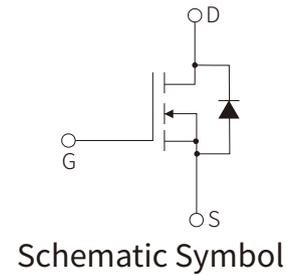
FEATURES

- | Advanced Split Gate Trench Technology
- | Excellent $R_{DS(ON)}$ and Low Gate Charge
- | 100% UIS TESTED!
- | 100% ΔV_{ds} TESTED!



APPLICATION

- | Load Switch
- | PWM Application
- | Power Management



APPROVALS

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

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	200	V
Pulse Drain Current Tested ⁽¹⁾	I_{DM}	80	A
Continuous Drain Current	I_D	$T_c=25^\circ\text{C}$	20
		$T_c=100^\circ\text{C}$	12
Gate-Source Voltage	V_{GSS}	± 20	V
Power Dissipation ($T_c=25^\circ\text{C}$)	P_D	39	W
Single Pulsed Avalanche Energy ⁽²⁾	E_{AS}	101	mJ
Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$
Thermal Resistance- Junction to Case	$R_{\theta JC}$	3.2	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _{DS} =250μA	200			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =250μA	2.4	3	3.6	V
Drain Leakage Current	I _{DSS}	V _{DS} =200V, V _{GS} =0V			1	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
On-State Resistance ⁽³⁾	R _{DS(on)}	V _{GS} =10V, I _D =8A		88	114	mΩ
Dynamic Characteristics						
Total Gate Charge	Q _g	V _{GS} = 0 to 10V V _{DS} =100V, I _D =3A		18		nC
Gate Source Charge	Q _{gs}			3.2		nC
Gate Drain ("Miller") Charge	Q _{gd}			3.5		nC
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =100V, f=1MHz		605		pF
Output capacitance	C _{oss}			61		pF
Reverse transfer capacitance	C _{rss}			11		pF
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =100V, V _{GS} =10V R _{GEN} =1Ω, I _D =3A		16		nS
Turn-on Rise Time	t _r			31		nS
Turn-Off Delay Time	t _{d(off)}			33		nS
Turn-Off Fall Time	t _f			30		nS
Drain-Source Diode Characteristics and Max Ratings						
Drain to Source Diode Forward Voltage	V _{SD}	I _S =8A, V _{GS} =0V			1.2	V
Maximum Continuous Body Diode Forward Current	I _S				20	A
Maximum Pulsed Body Diode Forward Current	I _{SM}				80	A
Body Diode Reverse Recovery Time	t _{rr}	I _F =5A, dI/dt=100A/μs		90		ns
Body Diode Reverse Recovery Charge	Q _{rr}				260	

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. EAS condition: Starting T_J=25C, V_{DD}=100V, V_{GS}=10V, R_G=25ohm, L=10mH, I_{AS}=4.5A
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 0.5%

PARAMETER CHARACTERISTIC CURVE

Fig 1: Output Characteristics

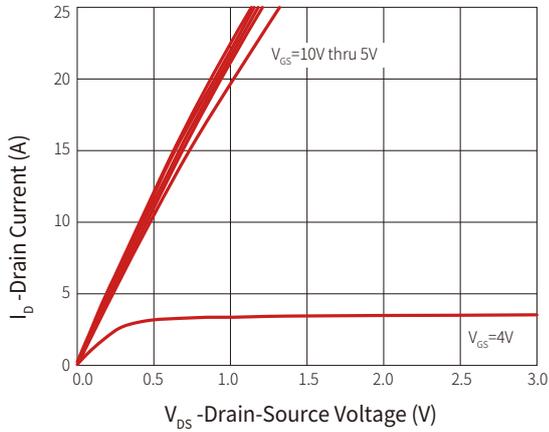


Figure 2: Transfer Characteristics

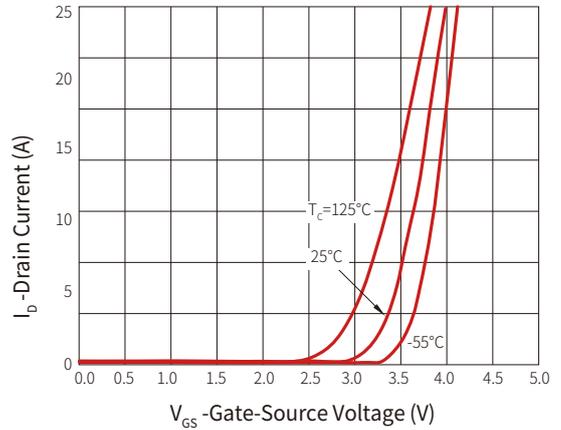


Figure 3: R_{DS(on)}- Drain Current

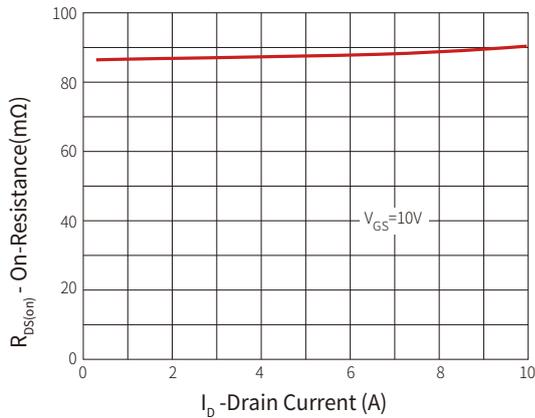


Figure 4: R_{DS(on)}-Junction Temperature

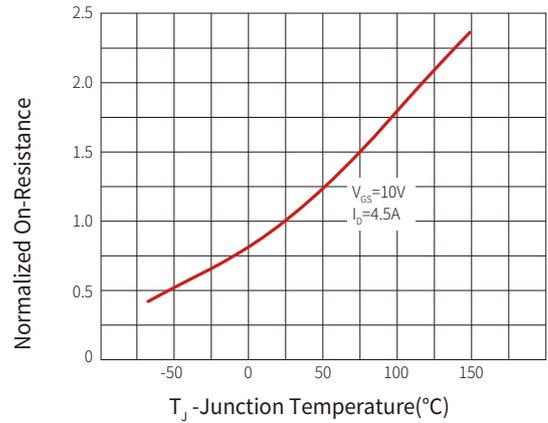


Figure 5: Gate Charge

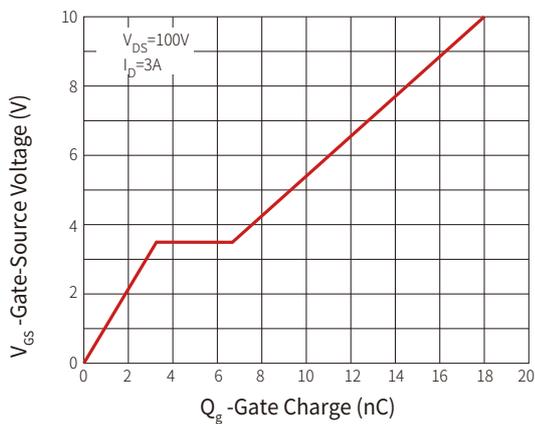


Figure 6: Capacitance Characteristics

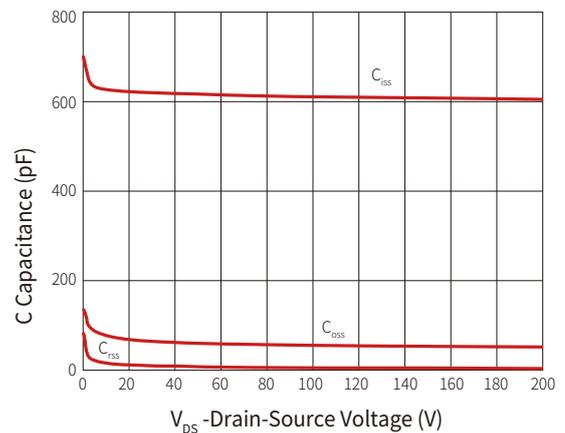


Figure 7: Safe Operation Area

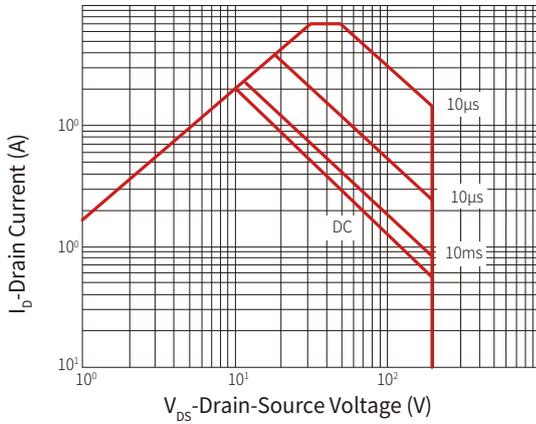


Figure 8: BV_{DSS} vs Junction Temperature

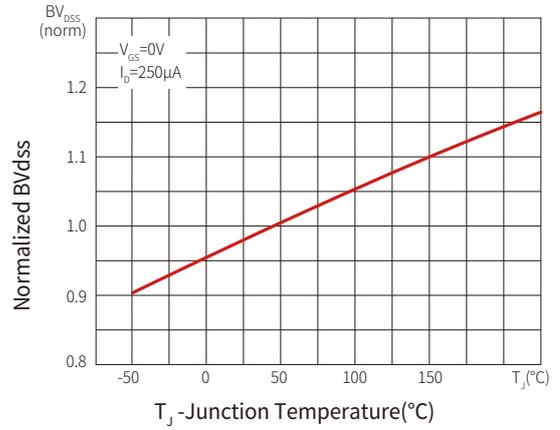


Figure 9: $V_{GS(th)}$ vs Junction Temperature

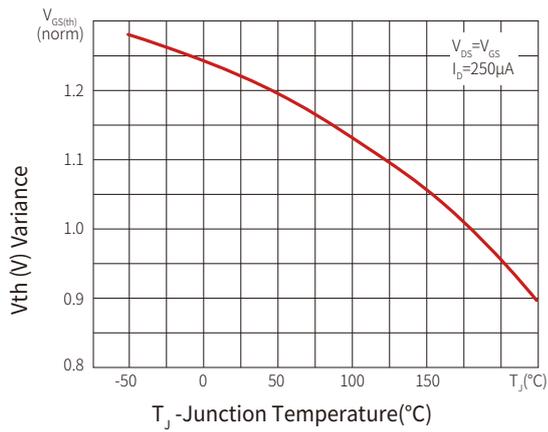


Figure 10: Figure 11 Current De-rating

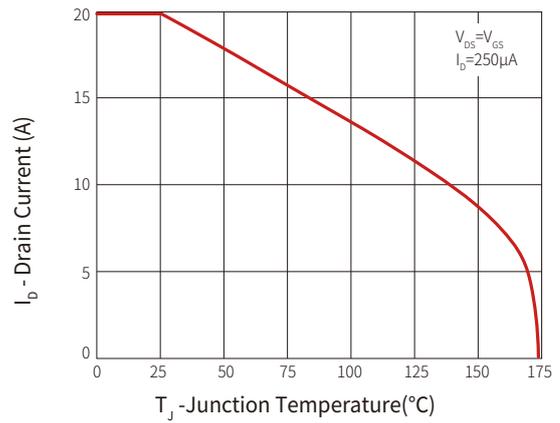
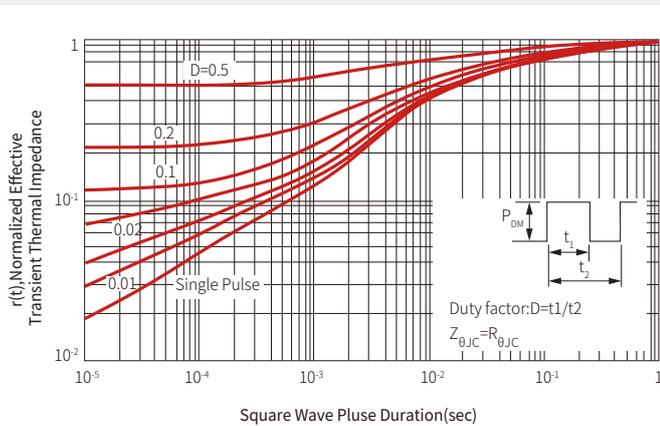
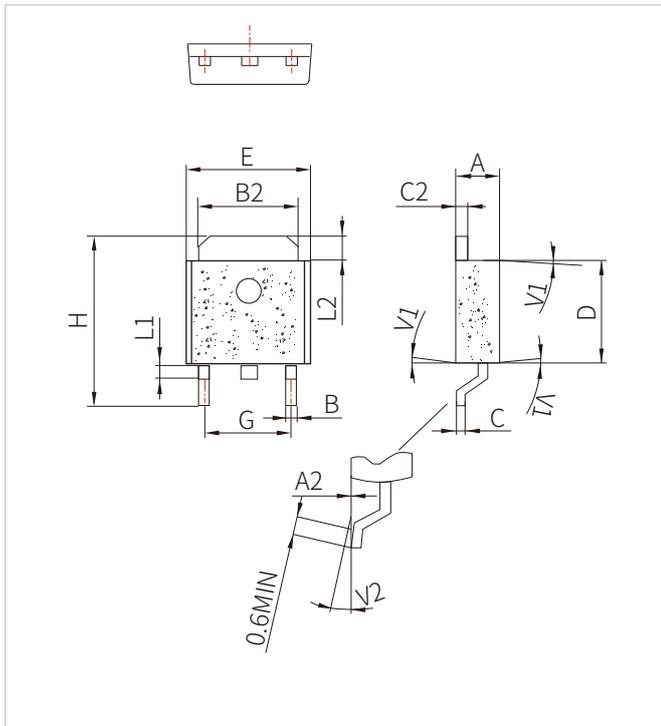


Figure 11: Normalized Maximum Transient Thermal Impedance



TO-252 PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.80	0.252		0.268
G	4.40		4.70	0.173	0.1	0.185
H	9.35		10.7	0.368		0.421
L1	1.30		1.70	0.051	0.143	0.067
L2	1.37		1.50	0.054		0.059
V1		4°			0.130	
V2	0°		8°	0°		8°

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SNM20N20D	TO-252	 20N20 XXXX	2500PCS	13"

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By QR Code

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