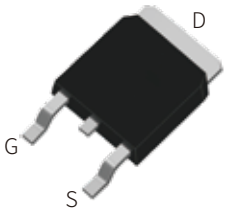
FEATURES

- Advanced trench cell design
- Low Thermal Resistance



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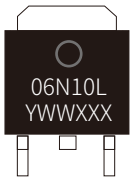
APPLICATION

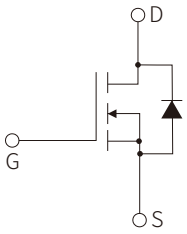
- Motor drivers
- DC - DC Converter



Marking

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 T_C=25°C		V_{DS}	100	V
Drain Current (Pulsed) T_C=25°C V_{GS}=10V		I_{DM} *,***	320	A
Drain Current (DC)	T_C=25°C V_{GS}=10V	I_D *	85	A
	T_C=100°C V_{GS}=10V		52	A
Gate-Source Voltage T_C=25°C		V_{GS}	±20	V
Drain power dissipation T_C=25°C		P_{tot} *	96	W
Diode Forward Current T_C=25°C		I_S	85	A
Single Pulsed Avalanche Energy V_{DD}=50V , L=1mH		E_{AS} *	220	mJ
Junction Temperature		T_J	150	°C
Storage Temperature		T_{STG}	-55 to 150	°C
Thermal Resistance –Junction to Ambient		$R_{\theta JA}$ **	42.6	°C/W
Thermal Resistance- Junction to Case		$R_{\theta JC}$ **	1.3	°C/W

Notes:
* Surface Mounted on 1 in^2 pad area, t≤ 10 sec
** Pulse width ≤300 μs, duty cycle ≤ 2 %
*** limited by bonding wire

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_{DS}=250μA	100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_{DS}=250μA	1		2	V
Zero Gate Voltage Source Current	I_{DSS}	V_{DS}=80V,V_{GS}=0V			1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±20V ,V_{DS}=0V			±100	nA
Drain-Source On-State Resistance	$R_{DS(on)}$[a]	V_{GS}=10V,I_{DS}=20A		5.3	5.8	mΩ
		V_{GS}=4.5V,I_{DS}=10A		7.0	7.7	mΩ
Diode Characteristics						
Diode Forward Voltage	V_{SD}[a]	I_{SD}=20A,V_{GS}=0V			1.3	V
Reverse Recovery Time	t_{rr}	I_{SD}=20A dI_{SD}/dt=100A/μs		70		nS
Reverse Recovery Charge	Q_{rr}			91		nC
Dynamic Characteristics[b]						
Input capacitance	C_{iss}	V_{GS}=0V,V_{DS}=50V, Frequency = 1 MHz		2876		pF
Output capacitance	C_{oss}			516		pF
Reverse transfer capacitance	C_{rss}			37		pF
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=50V,V_{GEN}=10V R_G= 3.9Ω, R_L=2.5Ω, I_{DS}=20A		11		nS
Turn-on Rise Time	t_r			23		nS
Turn-Off Delay Time	$t_{d(off)}$			48		nS
Turn-Off Fall Time	t_f			34		nS
Gate Charge Characteristics[b]						
Total Gate Charge	Q_g	V_{DS}=50V,V_{GS}=10V,I_{DS}=20A		62		nC
Gate-Source Charge	Q_{gs}			12		nC
Gate-Drain Charge	Q_{gd}			18		nC

Notes:
a : Pulse test ; pulse width≤300μs, duty cycle≤2 %
b : Guaranteed by design, not subject to production testing

PARAMETER CHARACTERISTIC CURVE

Figure1: Power Capability

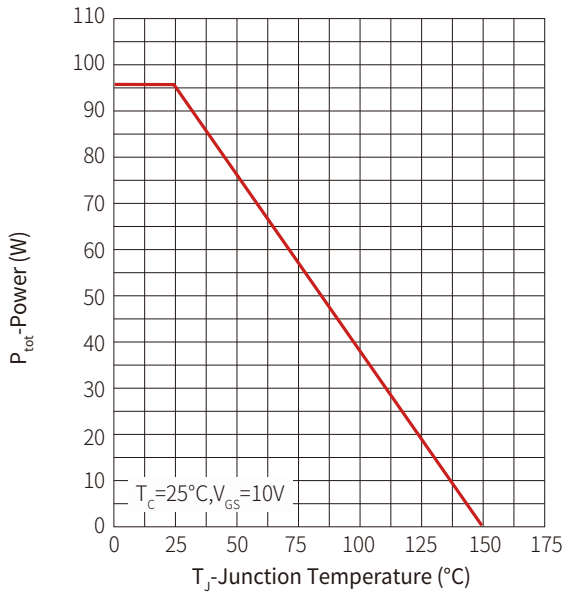


Figure2: Current Capability

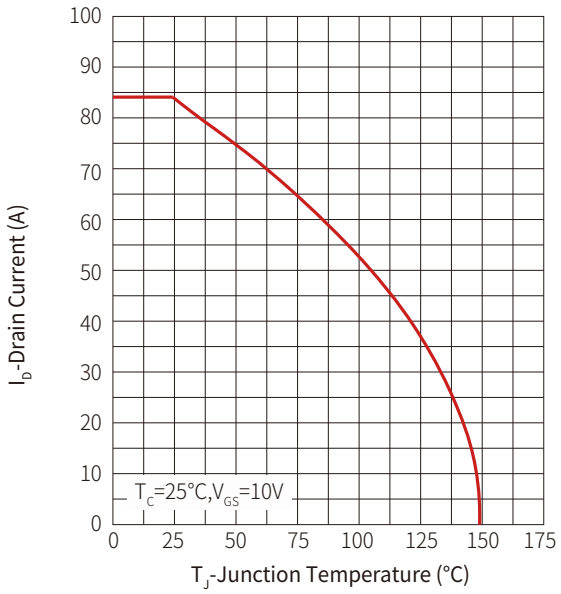


Figure3: Safe operating Area

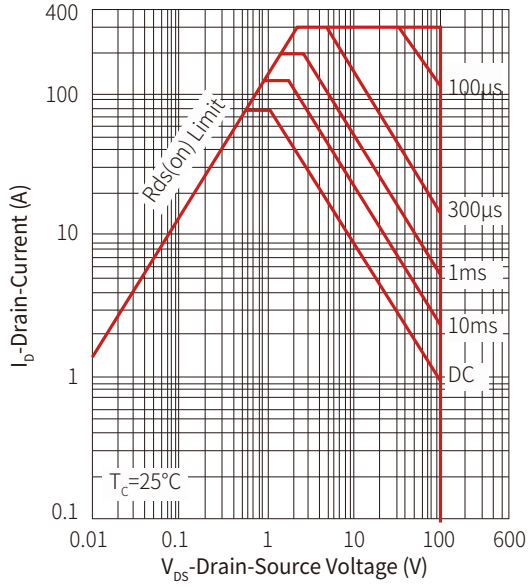


Figure 4: Transient Thermal Impedance

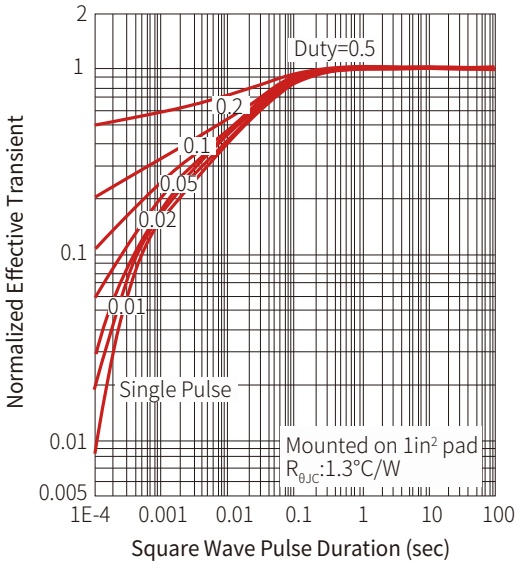


Figure 5:Output Characteristics

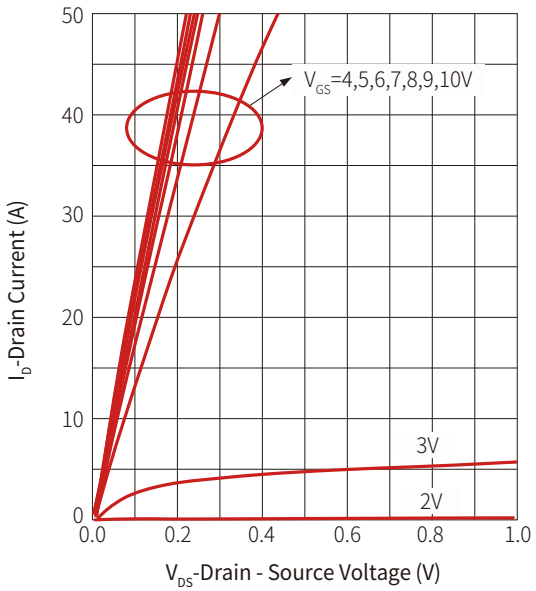


Figure 6: On Resistance

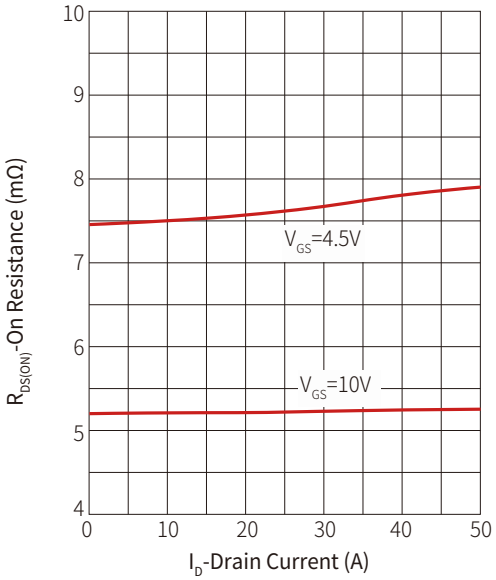


Figure 7:Transfer Characteristics

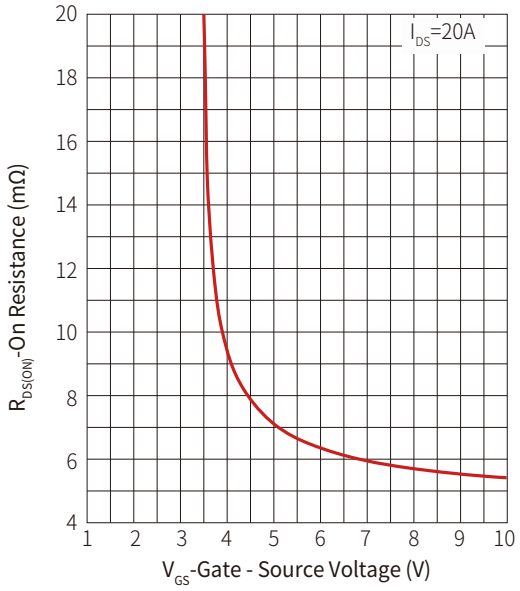


Figure 8: Normalized Threshold Voltage

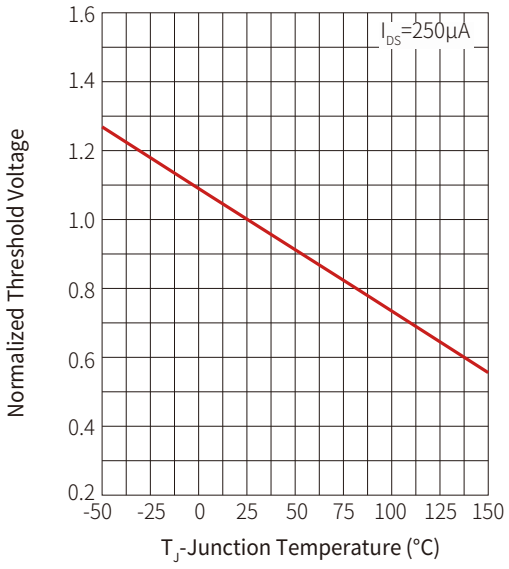


Figure 9:Normalized On Resistance

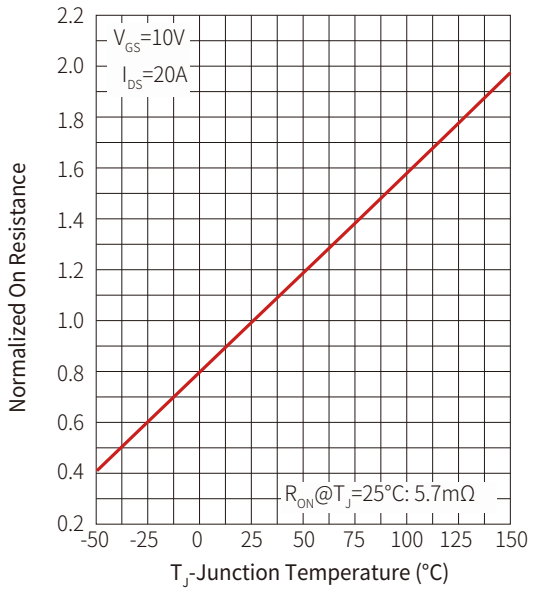


Figure 10: Diode Forward Current

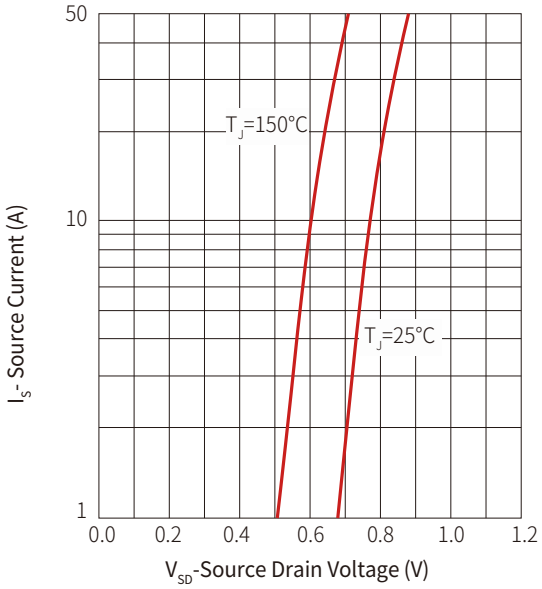


Figure 11:Capacitance

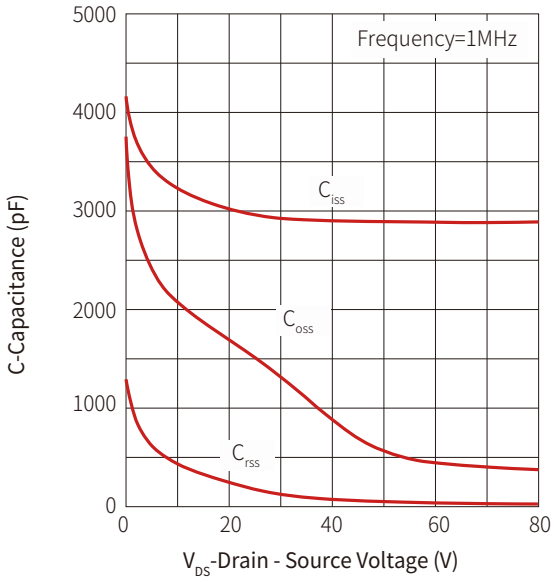
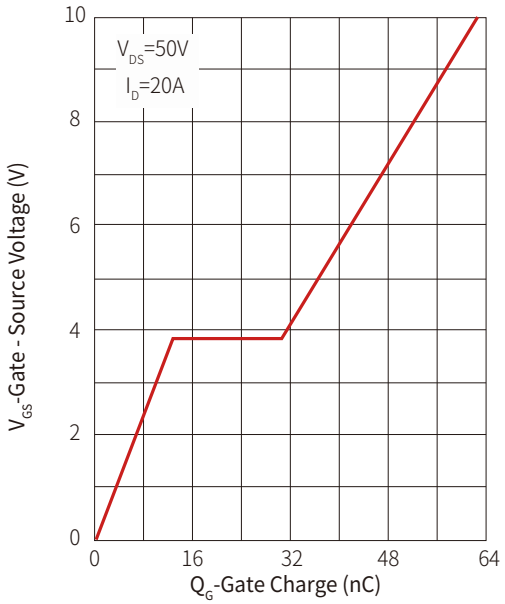
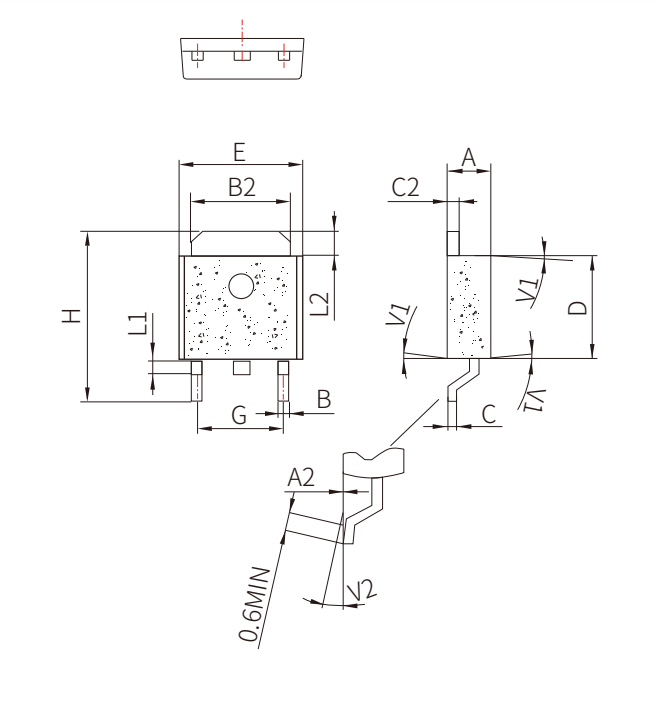


Figure 12: Gate Charge



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	QTY/Reel	Reel Size
SNM06N10L	TO-252	2500PCS	13”

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