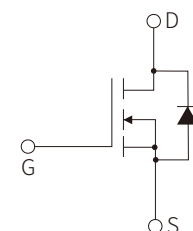
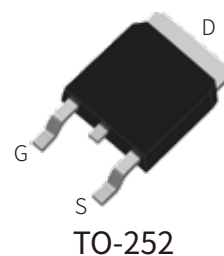


FEATURES

- | $R_{DS(ON)}$ Typ = 500mΩ @ $V_{GS} = 10V$
- | Low FOM $R_{DS(ON)} \times Q_G$
- | Extremely low losses due to very low E_{on} and E_{off}
- | Qualified for industrial grade applications according to JEDEC
- | Excellent stability and uniformity

APPLICATION

- | SMPS
- | Adapter
- | LED lighting
- | TV Power Supply
- | Solar Inverter



Schematic Symbol

APPROVALS

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

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	650	V
Pulsed Drain Current $T_c = 25^\circ\text{C}^{(2)}$	I_{DM}	18	A
Continuous Drain Current ⁽¹⁾	I_D	$T_c = 25^\circ\text{C}$ 8	A
		$T_c = 100^\circ\text{C}$ 5	A
Power Dissipation $T_c = 25^\circ\text{C}$	P_D	80	W
Gate-to-Source Voltage	V_{GS}	±30	V
Single Pulsed Avalanche Energy ⁽³⁾	E_{AS}	61.25	mJ
Junction & Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.6	°C/W
Thermal Resistance, Junction-to- Ambient	$R_{\theta JA}$	80	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _{DS} =250μA	650			V
Gate Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0V			±100	nA
Drain Leakage Current	I _{DSS}	V _{DS} =650V, V _{GS} =0V			1	μA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	3	3.5	4	V
Static Drain-Source ON-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =2.5A		500	600	mΩ
Dynamic Characteristics						
Input capacitance	C _{iss}	V _{GS} =0V, V _{DS} =50V, f = 1MHz		368		pF
Output capacitance	C _{oss}			85		pF
Reverse transfer capacitance	C _{rss}			4.5		pF
Total Gate Charge	Q _g	V _{DD} =400V, V _{GS} =0 to 10V I _D =3A		12		nC
Gate-Source Charge	Q _{gs}			3.5		nC
Gate Drain("Miller") Charge	Q _{gd}			2.5		nC
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =400V, V _{GS} =15V R _G = 10Ω, I _D =3A		23		nS
Turn-on Rise Time	t _r			5.9		nS
Turn-Off Delay Time	t _{d(off)}			43		nS
Turn-Off Fall Time	t _f			6.5		nS
Drain-Source Diode Characteristics and Max Ratings						
Drain to Source Diode Forward Voltage	V _{SD}	I _{SD} =3A, V _{GS} =0V			1.3	V
Body Diode Reverse Recovery Time	t _{rr}	V _R =400V, I _F =3A di/dt = 100A/us		215		nS
Body Diode Reverse Recovery Charge	Q _{rr}			1.6		nC
Peak reverse recovery current	I _{rrm}			15.8		A

Notes:

1. The max drain current rating is junction temperature limited
2. Repetitive Rating: Pulse width limited by maximum junction temperature
3. E_{AS} condition: Starting T_J=25°C, V_{DD}=100V, V_G=10V, R_G=25ohm, L=10mH, I_{AS}=3.5A
4. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.

PARAMETER CHARACTERISTIC CURVE

Figure1: Typical Output Characteristics (25°C)

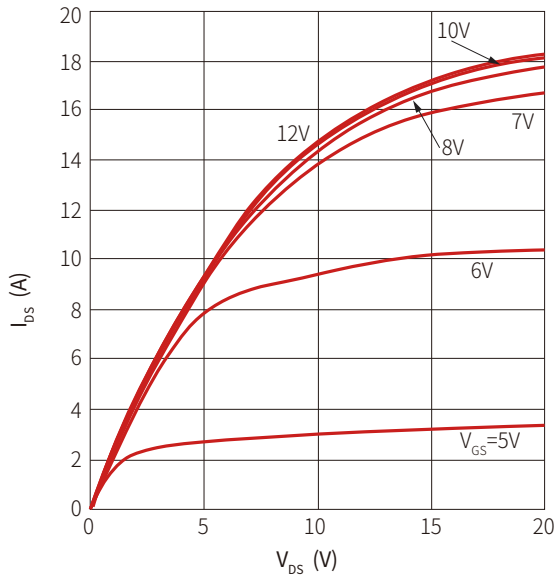


Figure2: Typical Transfer Characteristics

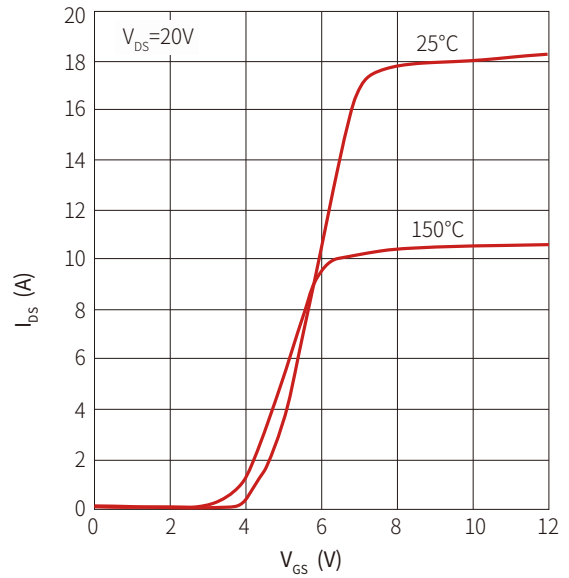


Figure3: Typical Diode V_{SD} vs. I_{SD} Characteristics

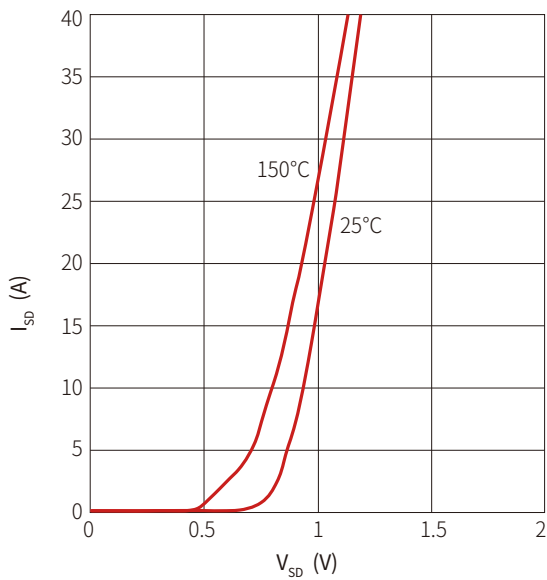


Figure 4: Transient Voltage vs Temperature Characteristics

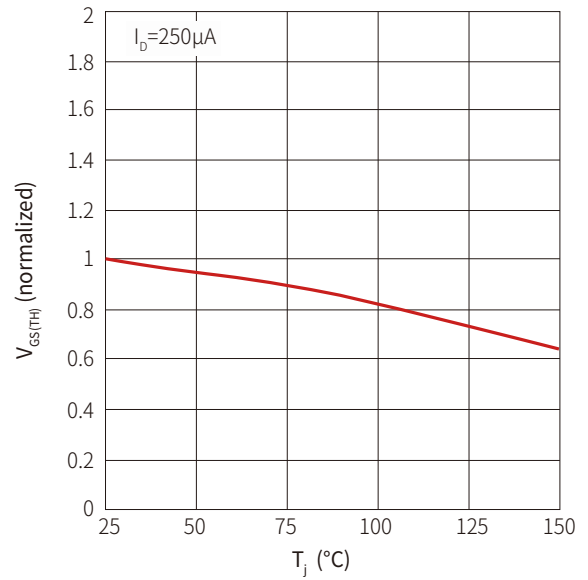


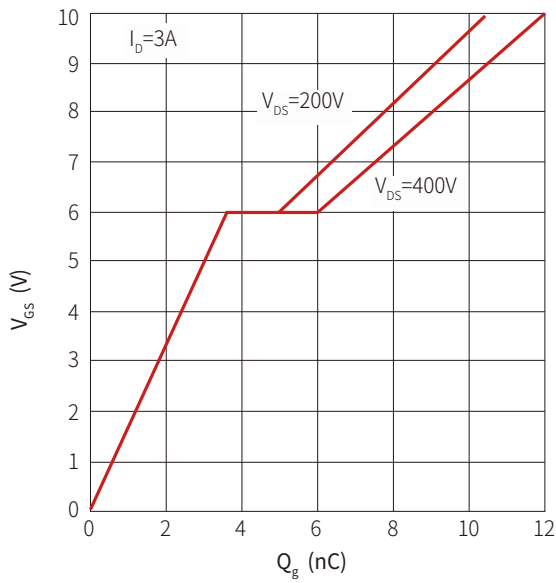
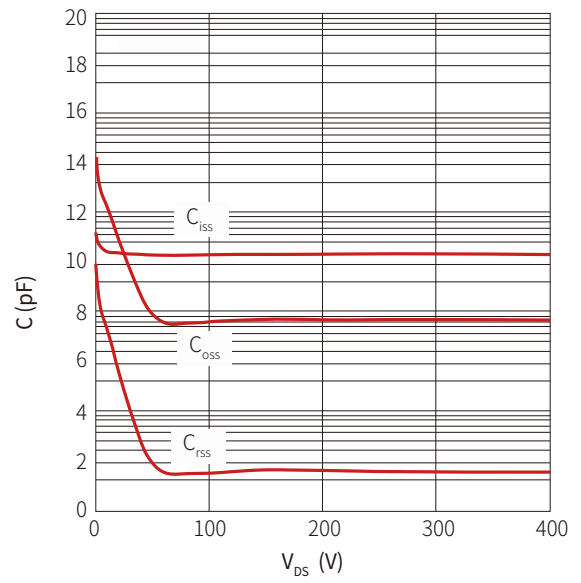
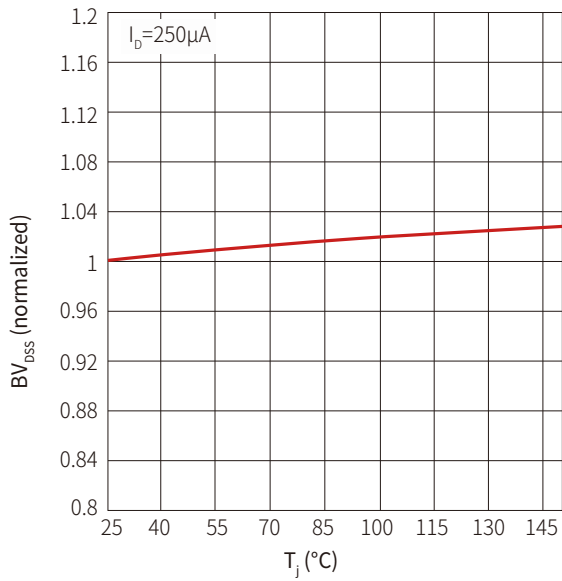
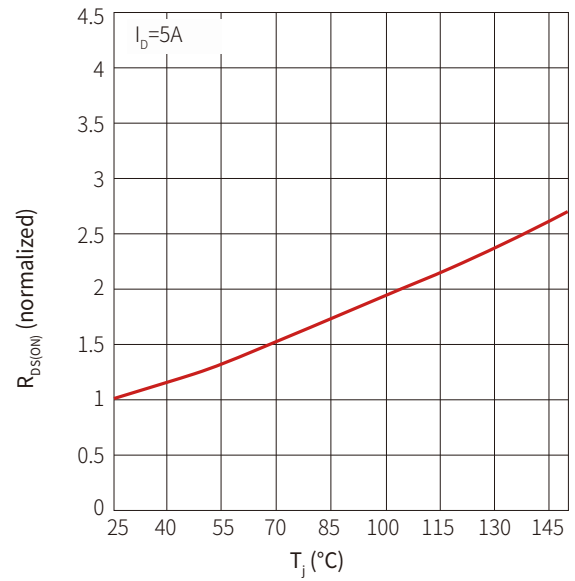
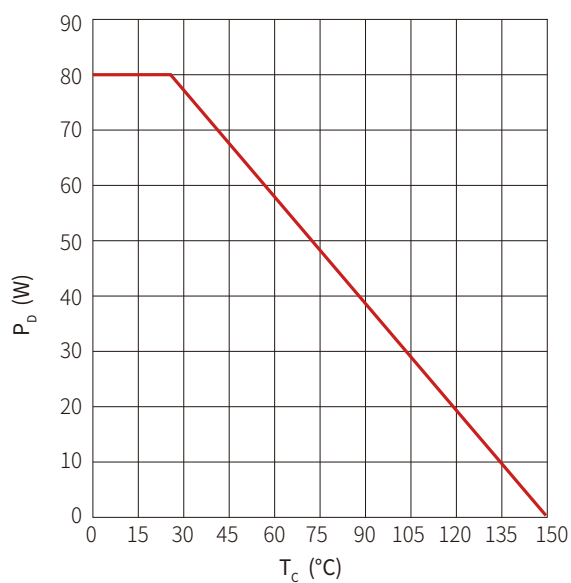
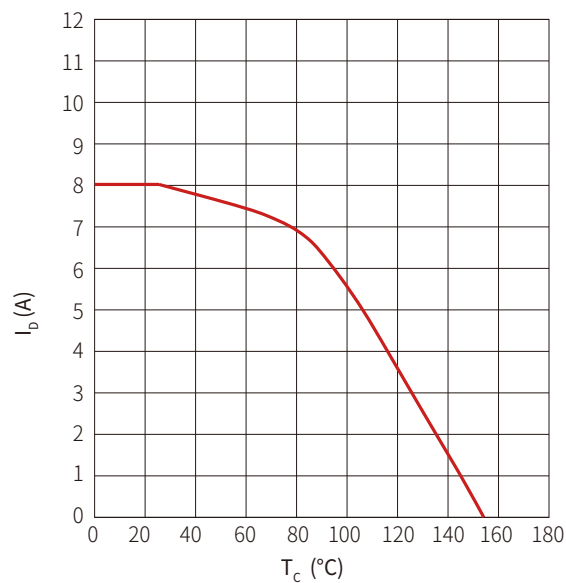
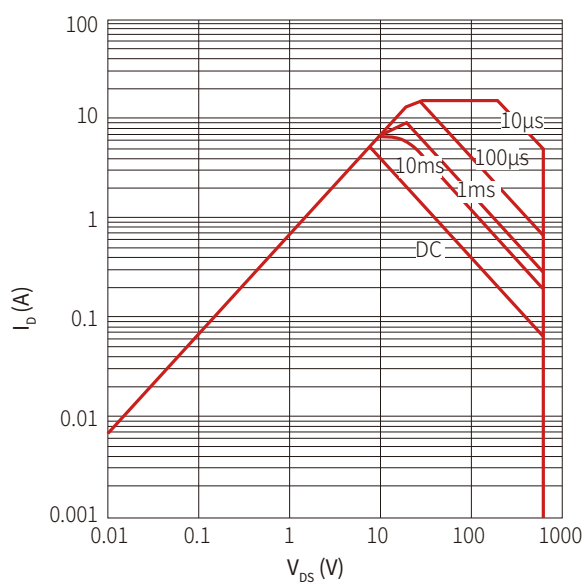
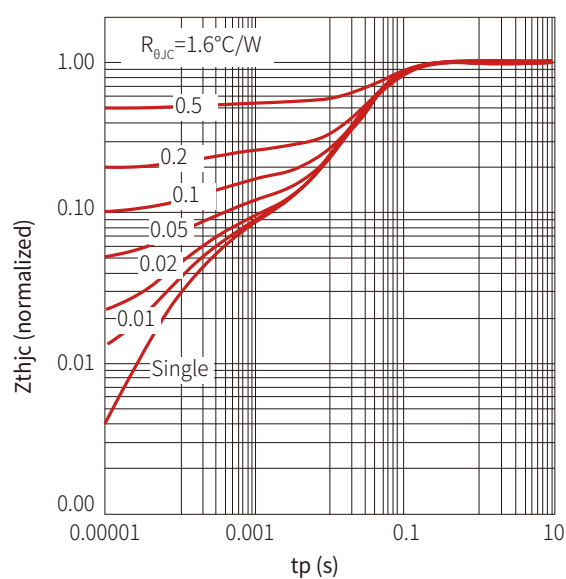
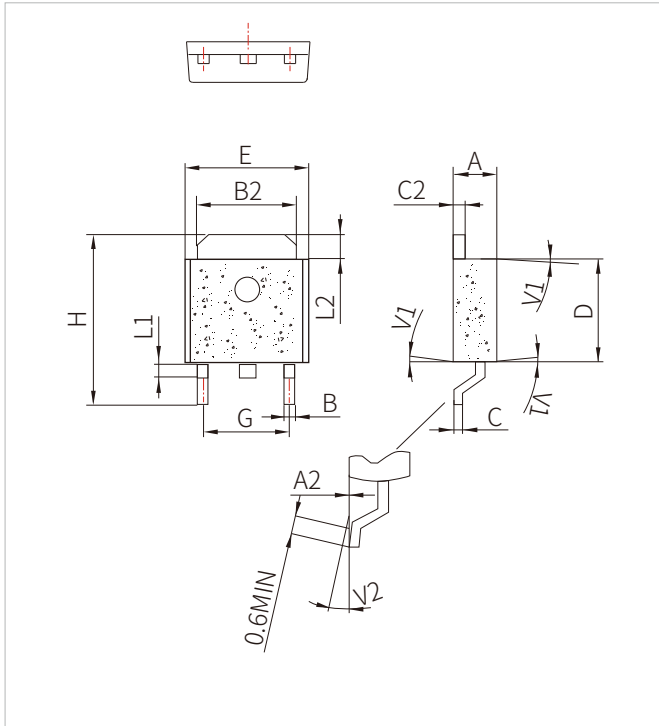
Figure5: Gate Charge Characteristics

Figure6: Typical Capacitance

Figure7: Breakdown Voltage vs. Temperature Characteristics

Figure 8: On Resistance vs Temperature Characteristics


Figure9: Power Dissipation Characteristics

Figure10: Drain Current vs. Temperature Characteristics

Figure11: Safe Operating Area

Figure 12: 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
SNM8N65D	TO-252	 8N65 XXXX	2500PCS	13"

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