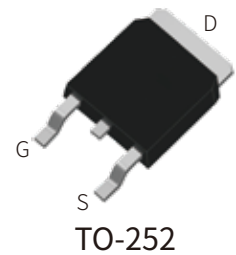


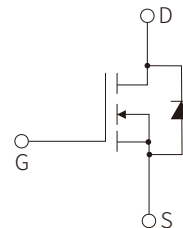
FEATURES

- Surface-Mounted Package
- Advanced Trench Cell design



APPLICATION

- LCD TV Appliances
- LCDM Appliances
- High Power Inverter System



Schematic Symbol

APPROVALS

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

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Drain-Source Voltage $T_c=25^{\circ}\text{C}$		V_{DS}	60	V
Drain Current (Pulsed) $T_c=25^{\circ}\text{C}$ $V_{GS}=10\text{V}$		I_{DM}^{***}	60	A
Drain Current (DC)	$T_c=25^{\circ}\text{C}$ $V_{GS}=10\text{V}$	I_D^{***}	35	A
	$T_c=100^{\circ}\text{C}$ $V_{GS}=10\text{V}$		22	A
Gate-Source Voltage $T_c=25^{\circ}\text{C}$		V_{GS}	± 20	V
Drain power dissipation $T_c=25^{\circ}\text{C}$		P_{tot}	35	W
Continuous-Source Current $T_c=25^{\circ}\text{C}$		I_S	35	A
Junction Temperature		T_J	150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55 to 150	$^{\circ}\text{C}$
Thermal Resistance –Junction to Ambient		$R_{\theta JA}^{**}$	37	$^{\circ}\text{C/W}$

Notes:

- * Pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$
- ** Mounted on Large Heat Sink
- *** 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}	$V_{GS}=0V, I_{DS}=250\mu A$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	1.5		2.5	V
Drain Leakage Current	I_{DSS}	$V_{DS}=48V, V_{GS}=0V$			1	μA
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
On-State Resistance	$R_{DS(on)}^a$	$V_{GS}=10V, I_{DS}=10A$		26	30	m Ω
		$V_{GS}=4.5V, I_{DS}=5A$		31	34	m Ω
Diode Characteristics						
Diode Forward Voltage	V_{SD}^a	$I_{SD}=10A, V_{GS}=0V$			1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS}=10A, V_{GS}=0V$ $dI_{SD}/dt=100A/\mu s$		12.7		nS
Reverse Recovery Charge	Q_{rr}			2.8		μC
Dynamic Characteristics ^b						
Input capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=30V,$ Frequency = 1 MHz		1058		pF
Output capacitance	C_{oss}			42		pF
Reverse transfer capacitance	C_{rss}			35		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=30V, V_{GEN}=10V$ $R_G=4.5\Omega, R_L=3\Omega,$ $I_{DS}=10A$		7.4		nS
Turn-on Rise Time	t_r			26		nS
Turn-Off Delay Time	$t_{d(off)}$			17		nS
Turn-Off Fall Time	t_f			28		nS
Gate Charge Characteristics ^b						
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_{DS}=10A$		19		nC
Gate-Source Charge	Q_{gs}			5		nC
Gate-Drain Charge	Q_{gd}			2.6		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

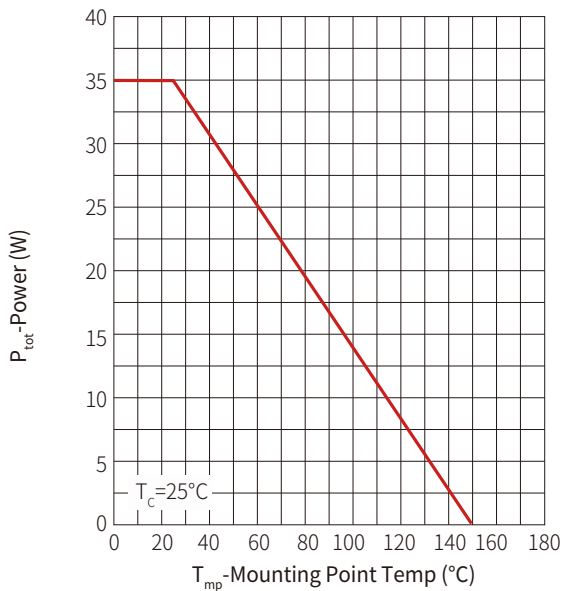


Figure2: Current Capability

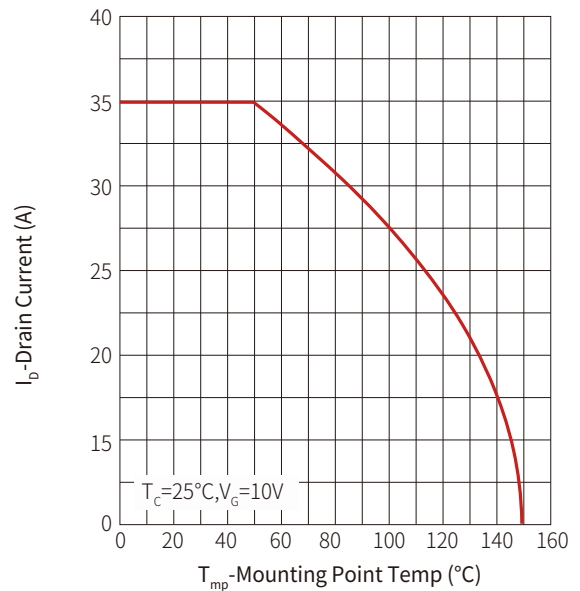


Figure3: Safe operating Area

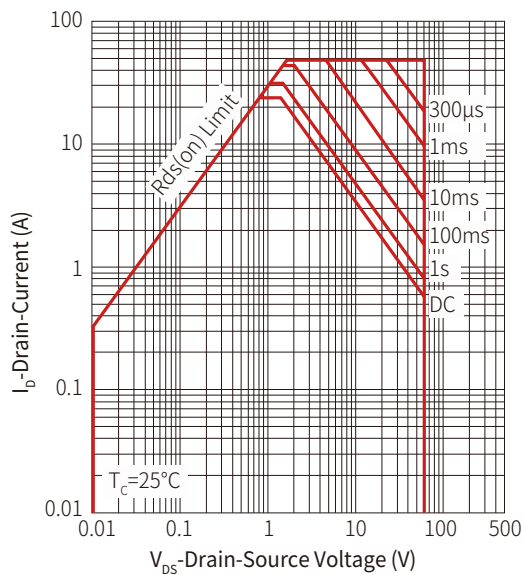


Figure 4: Transient Thermal Impedance

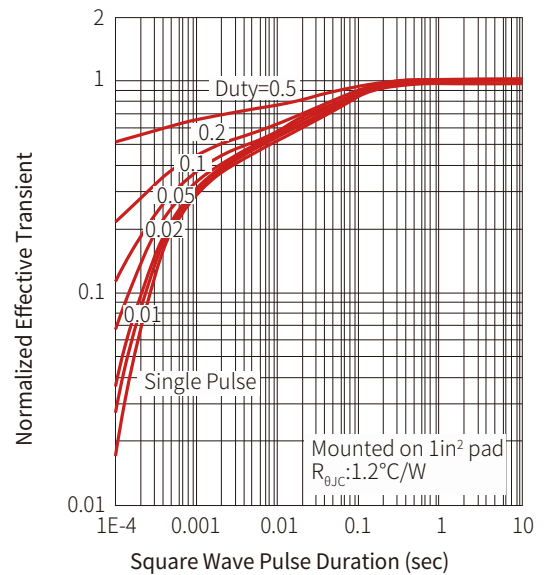


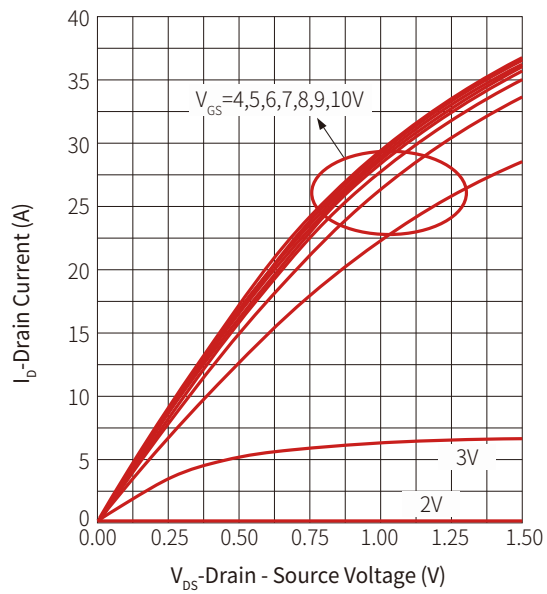
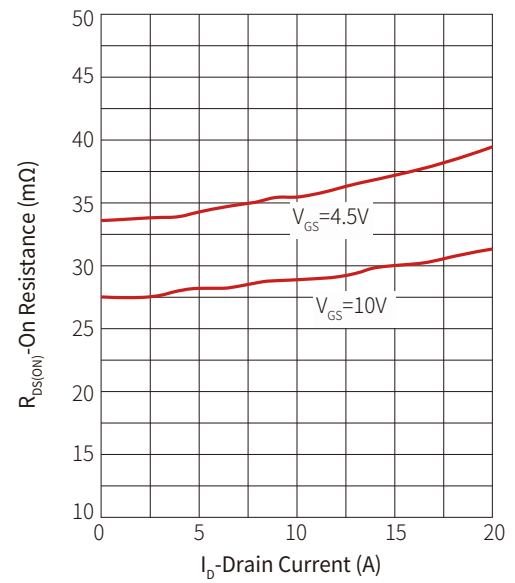
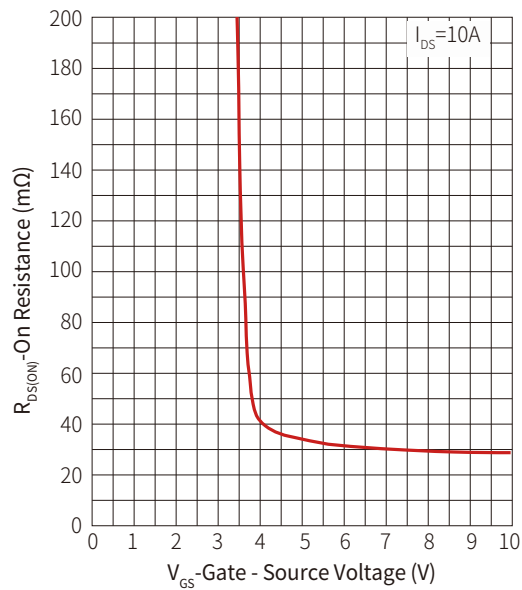
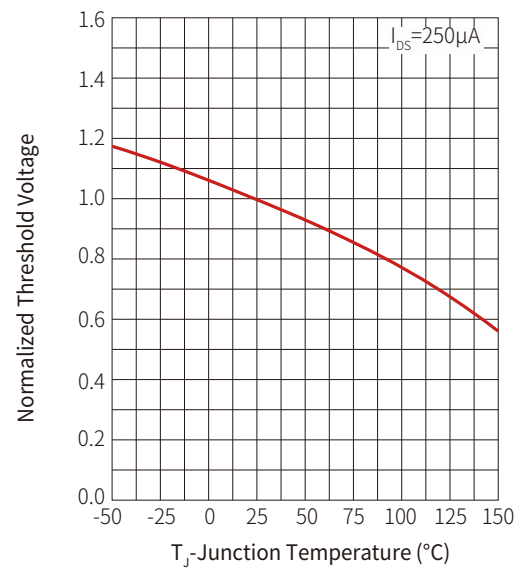
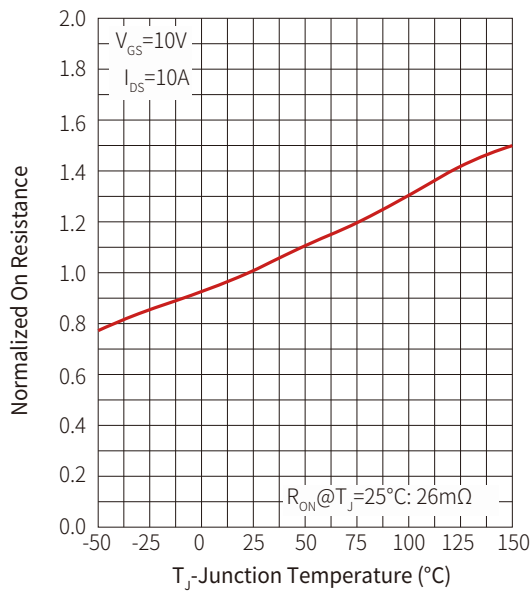
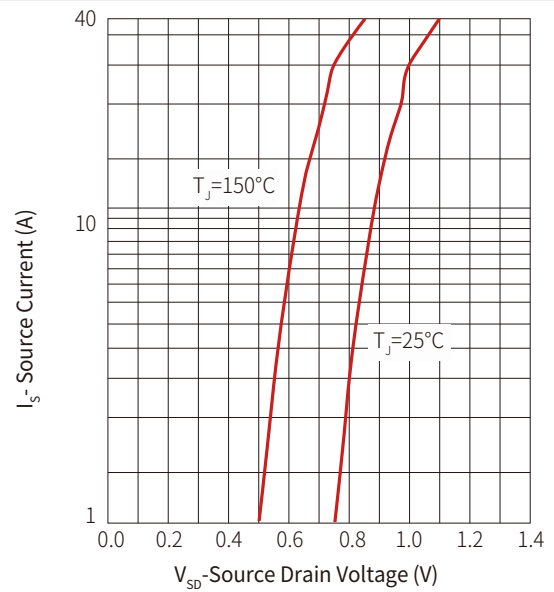
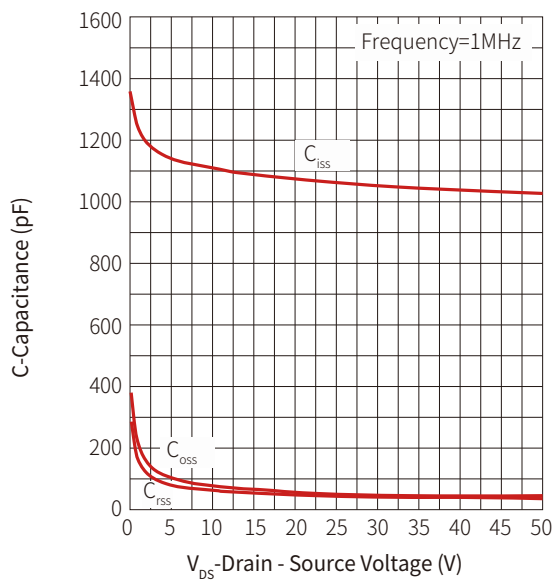
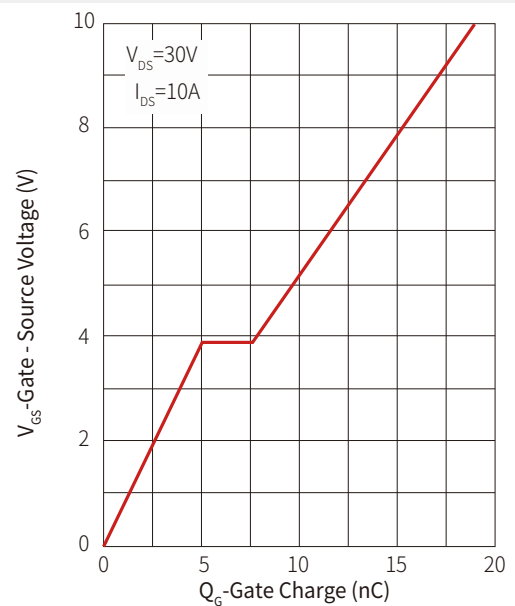
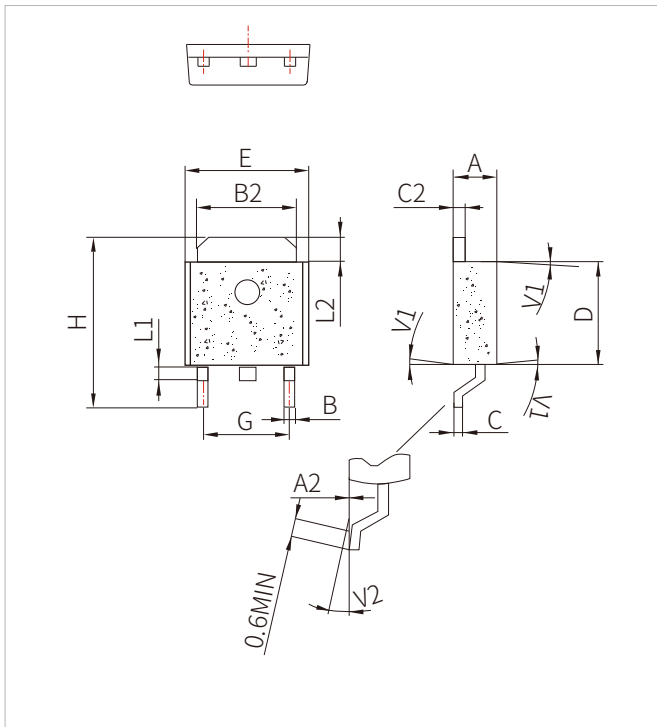
Figure 5: Output Characteristics

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	Marking	QTY/Reel	Reel Size
SNM35N06D	TO-252	 35N06 XXXX	2500PCS	13"

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