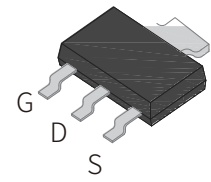


FEATURES

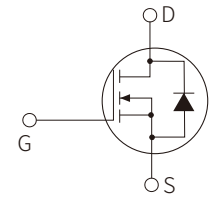
- Surface-mounted package
- Advanced trench cell design



SOT-89

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°C		V _{DS}	60	V
Drain Current (Pulsed) T _c =25°C V _{GS} =10V		I _{DM} ***	20	A
Drain Current (DC)	T _c =25°C V _{GS} =10V	I _D	10	A
	T _c =100°C V _{GS} =10V		8	A
Gate-Source Voltage T _c =25°C		V _{GS}	±20	V
Total Power Dissipation T _c =25°C		P _{tot}	15	W
Diode Forward Current T _c =25°C		I _S	20	A
Junction Temperature		T _J	-55 ~ +150	°C
Storage Temperature		T _{STG}	-55 ~ +150	°C
Thermal Resistance –Junction to Ambient		R _{θJA} **	20	°C/W
Thermal Resistance- Junction to Case		R _{θJC} **	1.5	°C/W

Notes:

** Pulse width $\leq 30\mu\text{s}$, duty cycle $\leq 2\%$

** Mounted on Large Heat Sink

*** Limited by bonding wire

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

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	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	1.0		2.0	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
Drain-Source On-State Resistance	$R_{DS(on)}^a$	$V_{GS}=10V, I_{DS}=6A$		44	50	m Ω
		$V_{GS}=4.5V, I_{DS}=4A$		50	58	m Ω
Diode Characteristics						
Diode Forward Voltage	V_{SD}^a	$I_{SD}=6A, V_{GS}=0V$			1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS}=6A, V_{GS}=0V$ $dI_{SD}/dt=100A/\mu s$		26		nS
Reverse Recovery Charge	Q_{rr}			2.8		μC
Diode Characteristics ^b						
Input capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=30V,$ Frequency = 1 MHz		651		pF
Output capacitance	C_{oss}			28		pF
Reverse transfer capacitance	C_{rss}			26		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=30V, V_{GEN}=10V$ $R_G=4.5\Omega, R_L=5\Omega,$ $I_{DS}=6A$		5		nS
Turn-on Rise Time	t_r			21		nS
Turn-Off Delay Time	$t_{d(off)}$			15		nS
Turn-Off Fall Time	t_f			23		nS
Gate Charge Characteristics ^b						
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_{DS}=6A$		12		nC
Gate-Source Charge	Q_{gs}			3		nC
Gate-Drain Charge	Q_{gd}			1.5		nC

Notes:

a : Pulse test ; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

b : Guaranteed by design, not subject to production testing

PARAMETER CHARACTERISTIC CURVE

Figure1: Power Capability

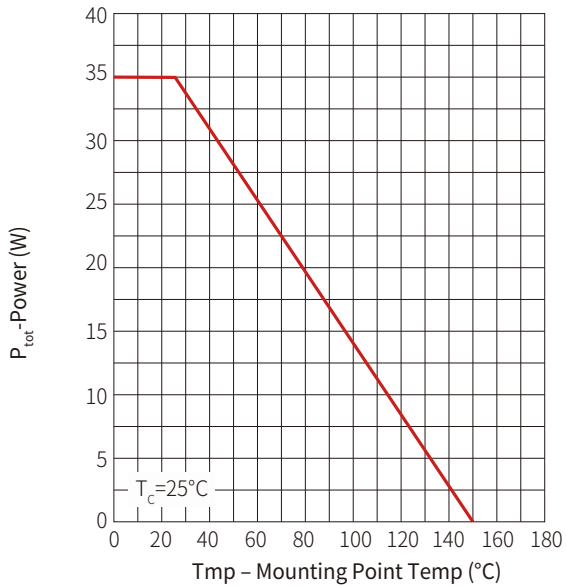


Figure2: Current Capability

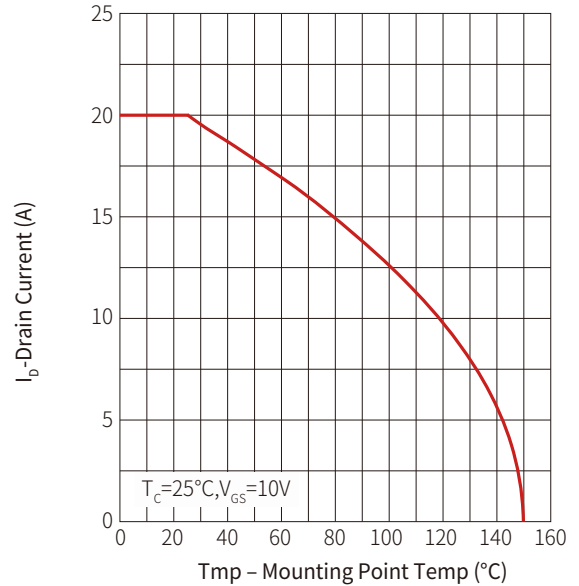


Figure3: Safe Operating Area

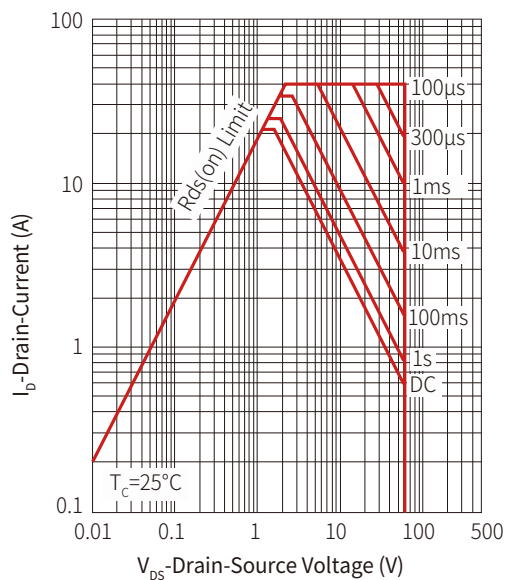


Figure 4: Transient Thermal Impedance

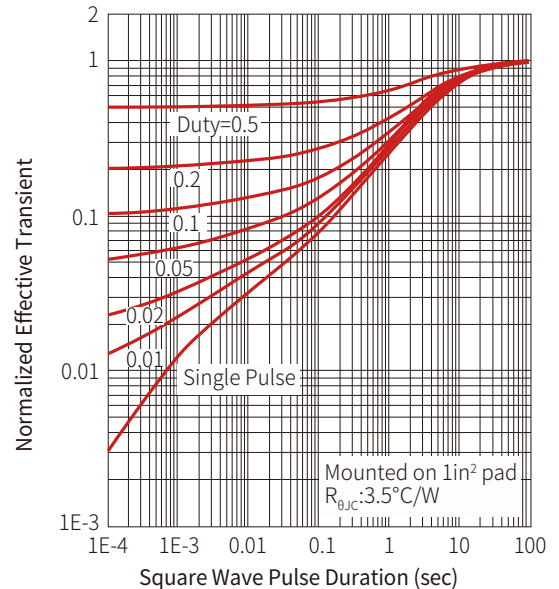


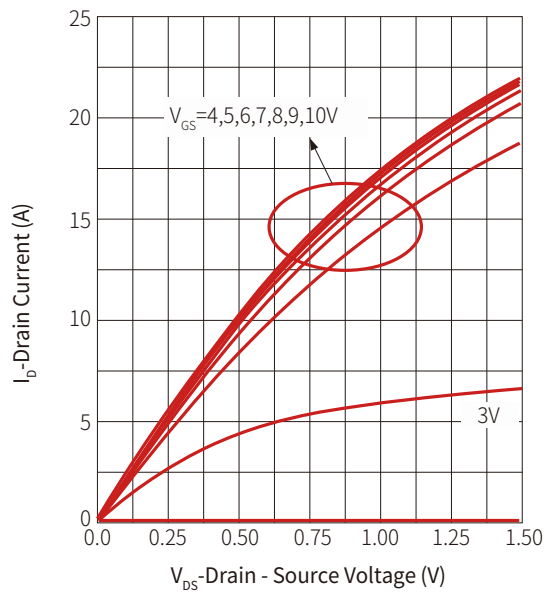
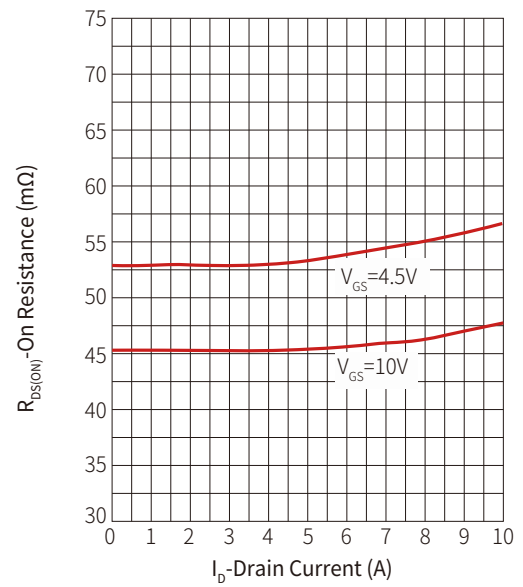
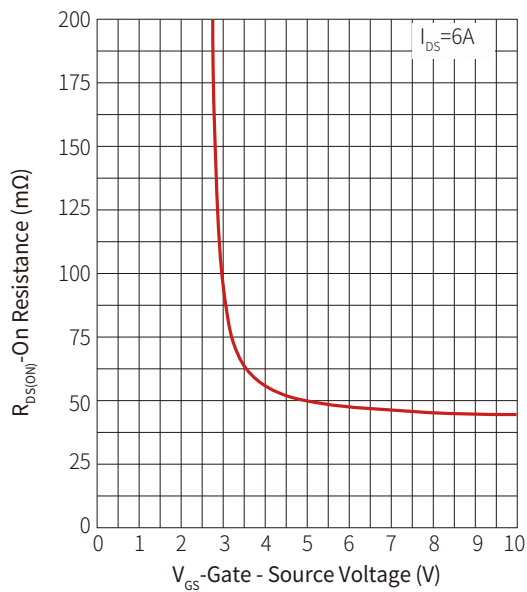
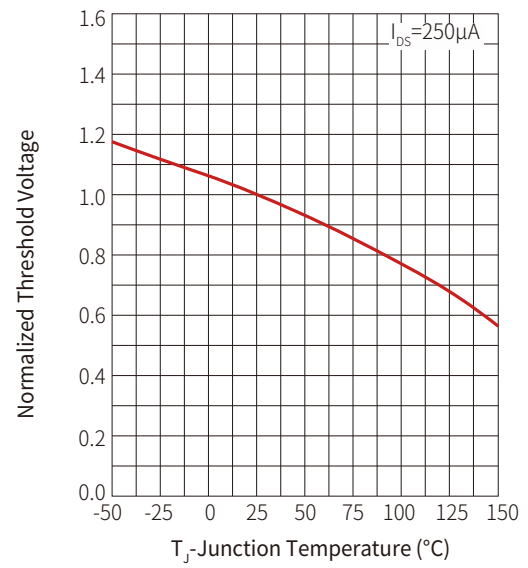
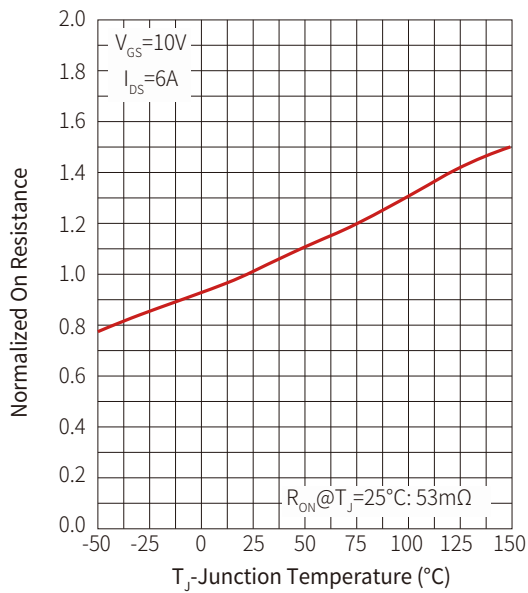
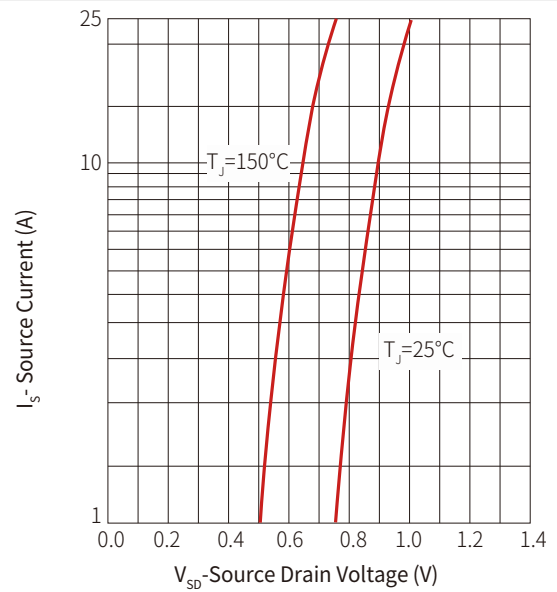
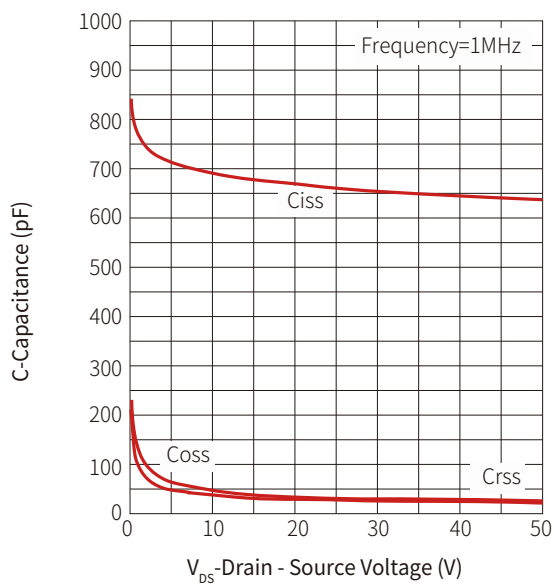
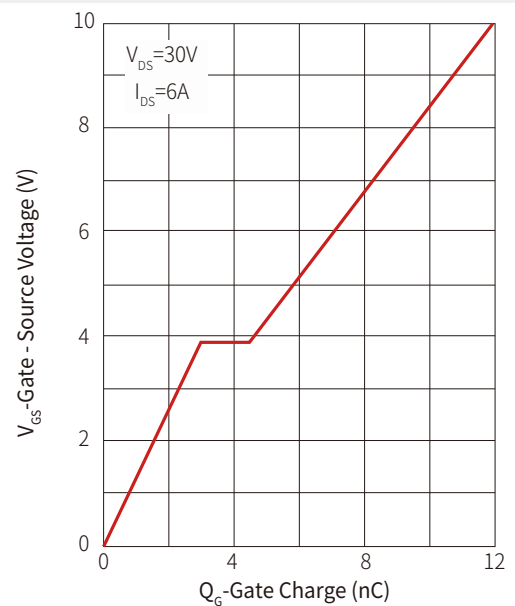
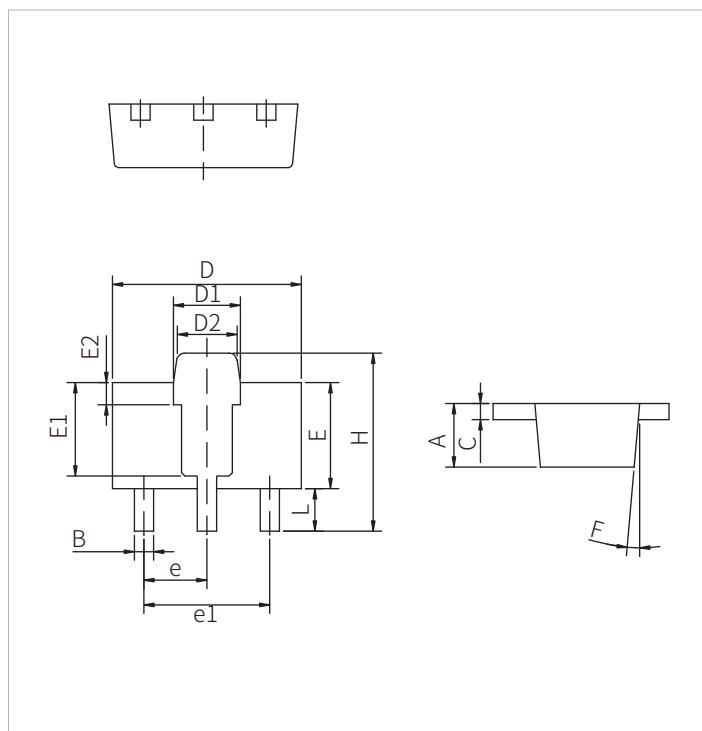
Figure 5: Output Characteristics

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


SOT-89 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.40		0.52	0.016		0.020
C	0.35		0.41	0.014		0.016
D	4.40		4.60	0.173		0.181
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.40		2.60	0.094		0.102
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5.00			5.000	
H	4.05		4.25	0.159		0.167
L	0.89		1.20	0.035		0.047

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SNM60N15C	SOT-89	SN60N15Q YWWXXX	1000PCS	7"

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By QR Code

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