

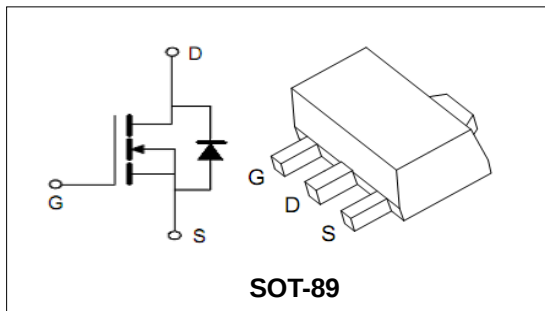
Features

- Improved dv/dt capability high ruggedness.
- Maximum junction temperature range (150°C)

Applications

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

BVDSS	100	V
ID	8	A
RDSON@VGS=10V	88	mΩ
RDSON@VGS=4.5V	97	mΩ



Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{(BR)DSS}	Drain-Source Breakdown Voltage		100	V
V _{GS}	Gate-Source Voltage		±20	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current	TA =25°C	8	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested (Note1)	TA =25°C	20	A
I _D	Continuous Drain current	TA =25°C	8	A
P _D	Maximum Power Dissipation	TA =25°C	1.5	W
R _{θJa}	Thermal Resistance Junction-to-Ambient (Note2)		83	°C/W

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
V _{(BR)DSS}	Drain- Source Breakdown Voltage	VGS=0V ID=250μA	100	--	--	V
I _{DSS}	Zero Gate Voltage Drain current	VDS=80V,VGS=0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	VGS=±20V,VDS=0V	--	--	±100	nA
V _{GS(TH)}	Gate Threshold Voltage	VDS=VGS,ID=250μA	1	--	2	V
R _{DS(ON)}	Drain-Source On-State Resistance (Note3)	VGS=10V, ID=5A	--	88	115	mΩ
		VGS=4.5V, ID=5A	--	97	126	
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated) (Note4)						
C _{iss}	Input Capacitance	VDS=30V, VGS=0V, f=1MHz	--	680	--	pF
C _{oss}	Output Capacitance		--	110	--	pF
C _{rss}	Reverse Transfer Capacitance		--	80	--	pF
Q _g	Total Gate Charge	VDS=30V, ID=5A, VGS=10V	--	16	--	nC
Q _{gs}	Gate-Source Charge		--	3.5	--	nC
Q _{gd}	Gate-Drain Charge		--	4	--	nC
Switching Characteristics (Note4)						
t _{d(on)}	Turn-on Delay Time	VDD=10V, ID=5A, VGS=10V RG=2.5Ω	--	11	--	nS
t _r	Turn-on Rise Time		--	7.3	--	nS
t _{d(off)}	Turn-off Delay Time		--	33	--	nS
t _f	Turn-off Fall Time		--	9	--	nS
Source- Drain Diode Characteristics@ TJ = 25°C (unless otherwise stated)						
V _{SD}	Forward on voltage	IS=2.5A,VGS=0V	--	--	1.3	V

Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: pulse width ≤ 300 us, duty cycle ≤ 2%.
4. Guranteed by design, not subject to production testing.

Typical Characteristics

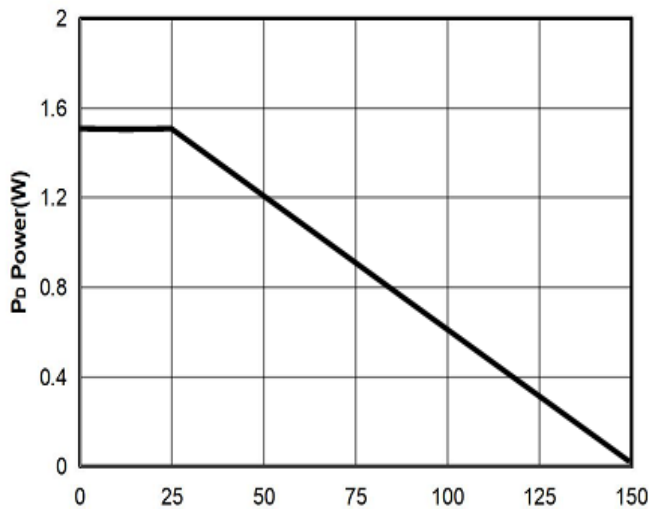


Figure1: Tj Junction Temperature (°C)

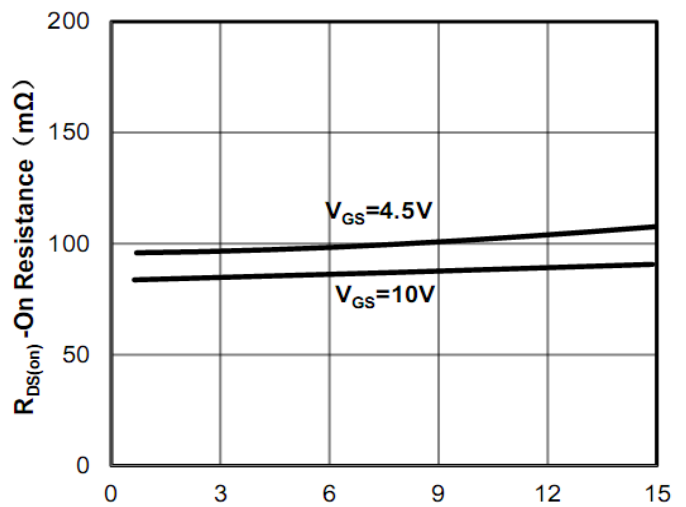


Figure2: Id Drain Current (A)

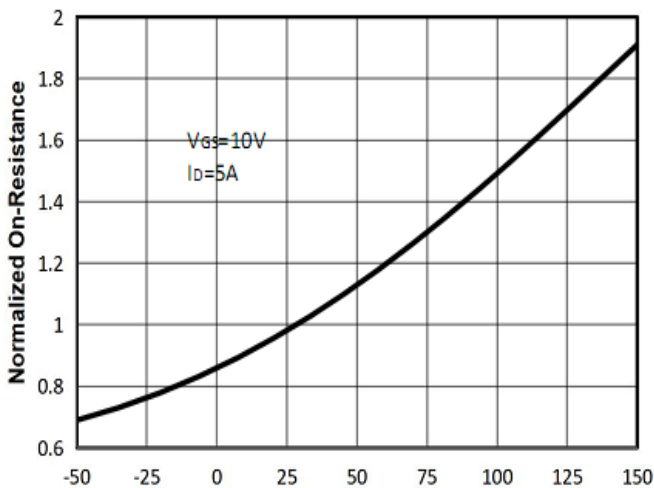


Figure3: Tj Junction Temperature (°C)

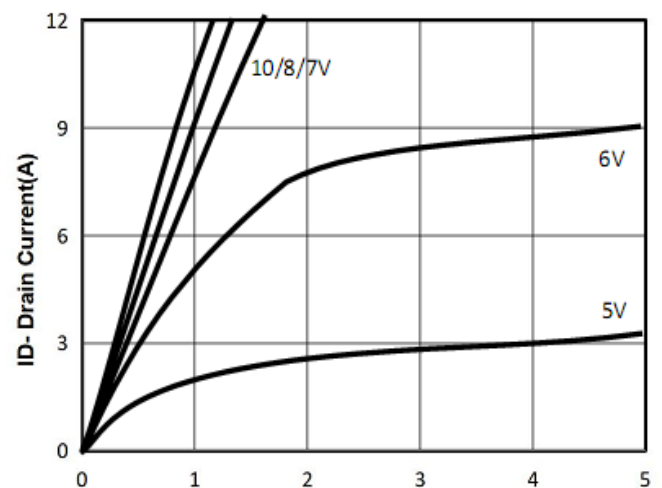


Figure4: VDS Drain-Source Voltage (V)

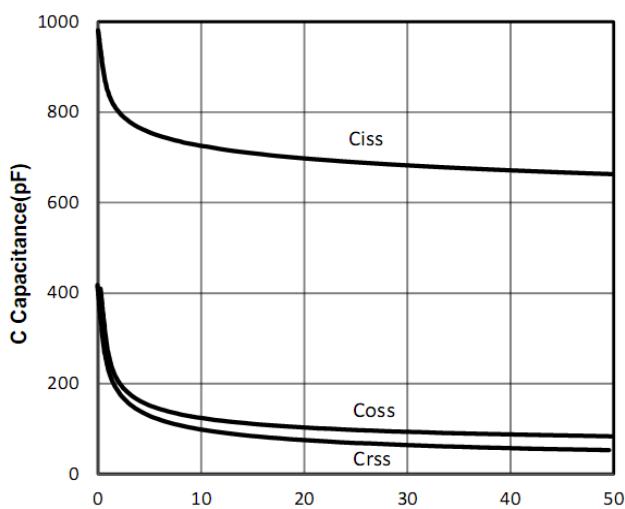


Figure5: VDS Drain-Source Voltage (V)

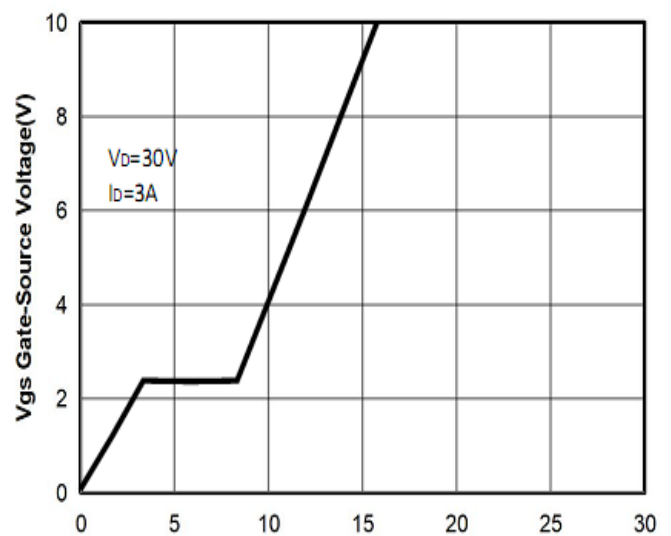


Figure6: Qg Gate Charge (nC)

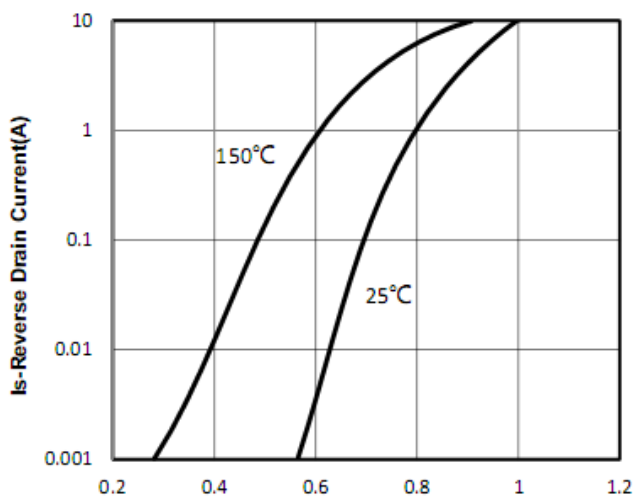


Figure7: Vsd Source-Drain Voltage (V)

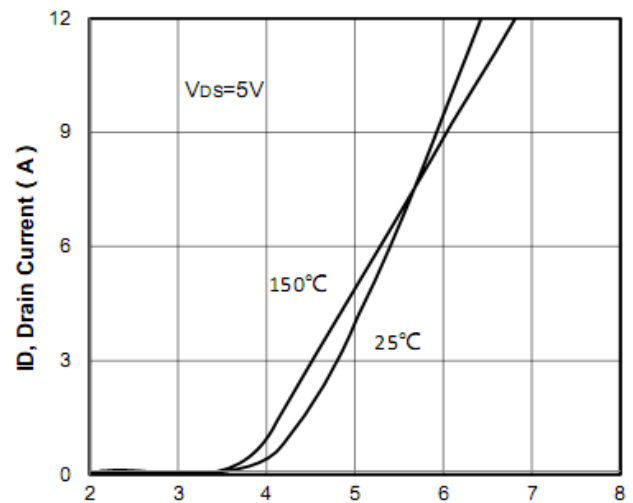


Figure8: Vgs Gate-Source Voltage (V)

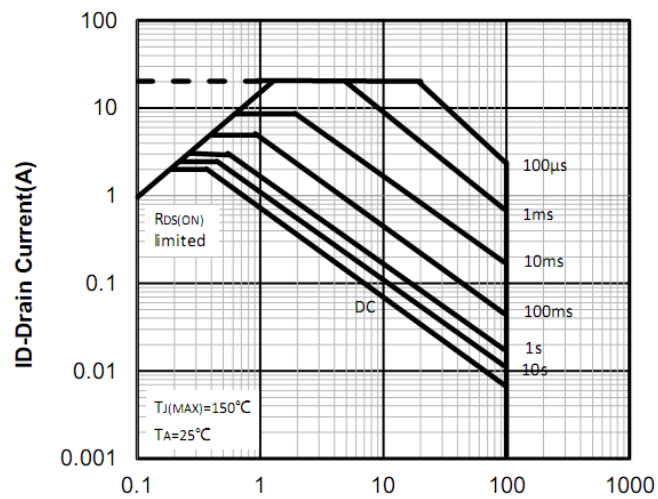


Figure9: VDS Drain -Source Voltage (V)

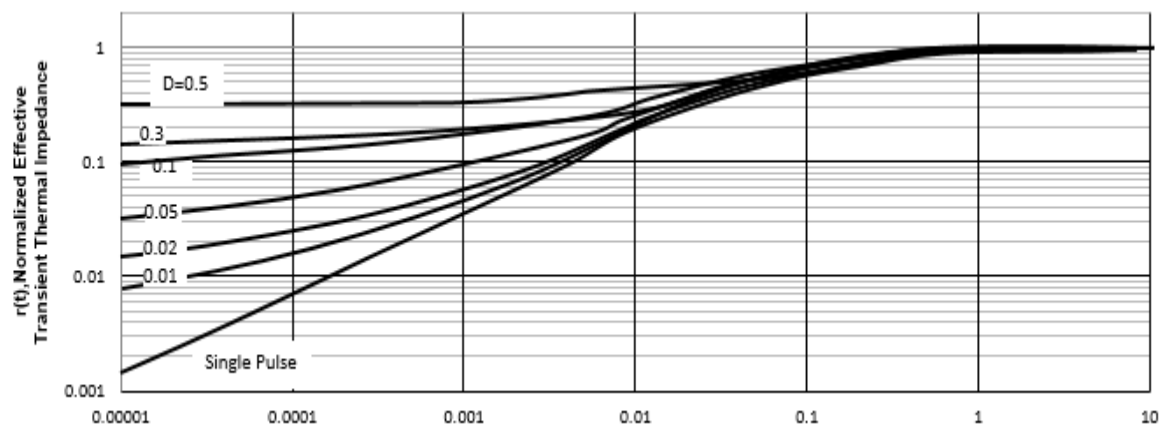


Figure10: Square Wave Pulse Duration (sec)

Test Circuit and Waveform:

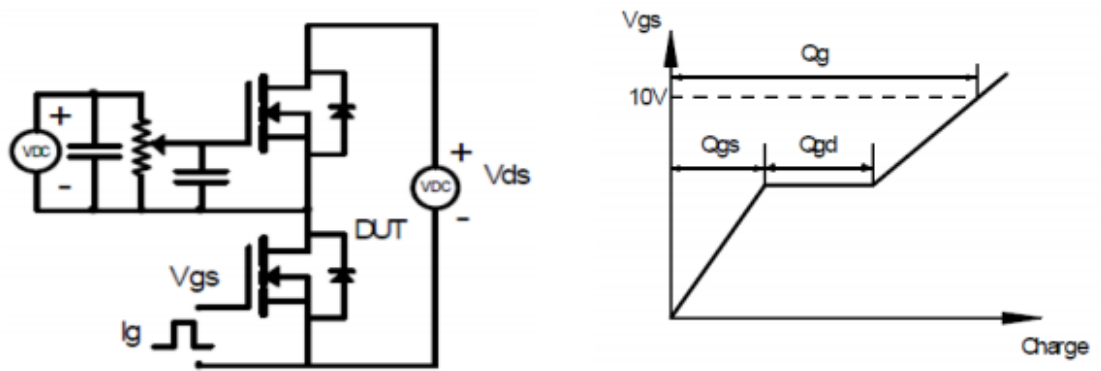


Figure A Gate Charge Test Circuit & Waveforms

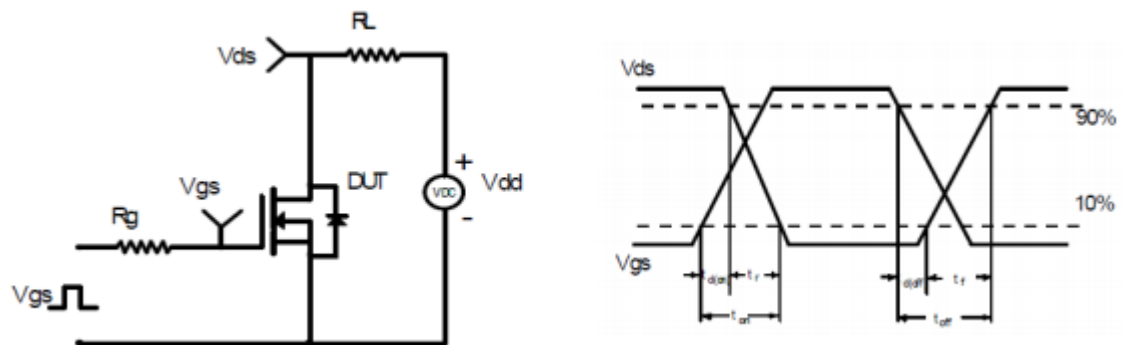
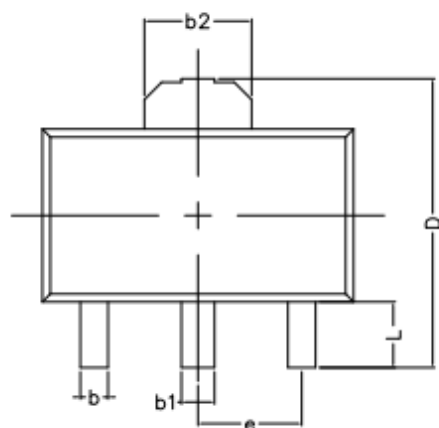
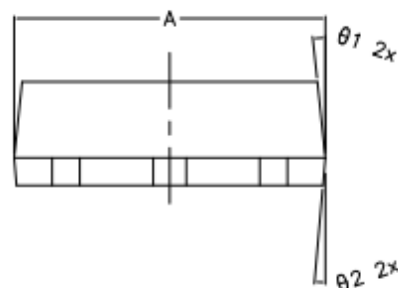
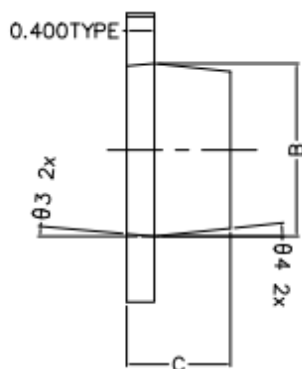


Figure B Switching Test Circuit & Waveforms

SOT-89 Package Outline Dimensions (Units: mm)



TOP VIEW



COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	4.450	4.550	4.650
B	2.450	2.550	2.650
C	1.400	1.500	1.600
D	4.100	4.200	4.300
L	0.850	0.950	1.050
b	0.350	0.400	0.450
b1	0.430	0.480	0.530
b2	1.500	1.550	1.600
e	1.500TYPE		
theta1	6° TYPE		
theta2	5° TYPE		
theta3	5° TYPE		
theta4	6° TYPE		