SHANGHAI SINO-IC MICROELECTRONICS CO., LTD.

SE100P60

P-Channel Enhancement-Mode MOSFET

Revision: A

General Description

Advanced trench technology to provide excellent RDS(ON), low gate charge and low operation voltage. This device is suitable for using as a load switch or in PWM applications.

- Simple Drive Requirement
- Small Package Outline
- Surface Mount Device

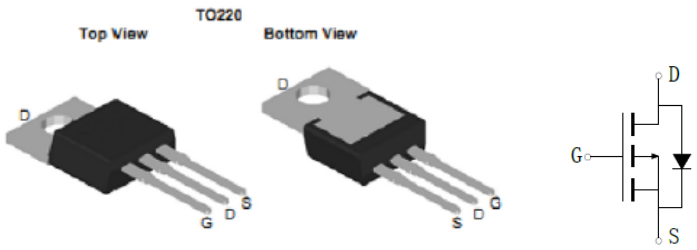
Features

For a single MOSFET

- V_{DS} = -100V
- $R_{DS(ON)}$ =18mΩ @ V_{GS}=-10V

Pin configurations

See Diagram below



Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-100	V
Gate-Source Voltage		V_{GS}	±25	V
Drain Current	Continuous	I_D	-60	A
	Pulsed		-240	
Total Power Dissipation	@TA=25℃	P_D	188	W
Operating Junction Temperature Range		T_J	-55 to 150	℃

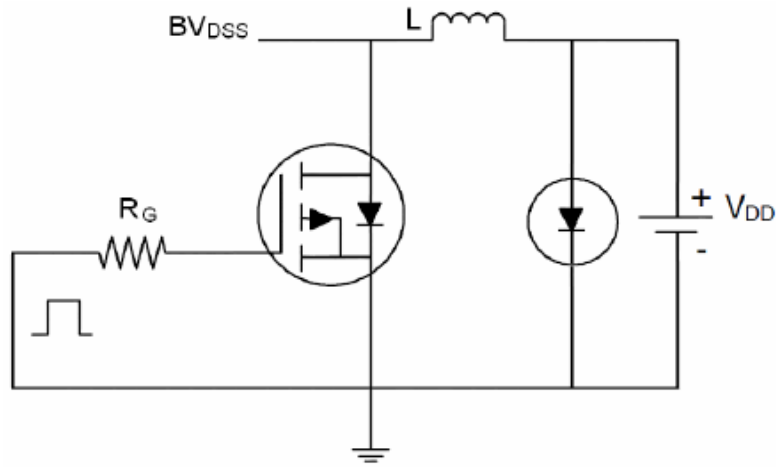
Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
OFF CHARACTERISTICS (Note 2)						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=-250μA, V_{GS}=0 V	-100			V
I_{DSS}	Drain to Source Leakage Current	V_{DS}= -100V, V_{GS}=0V			-1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}= 25V			100	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=-250μA	-2		-4	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-60A	-	18	25	mΩ
g_{FS}	Forward Transconductance	V_{DS}=-50V, I_D=-10A	5			S
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=-50V, f=1MHz		4200		pF
C_{oss}	Output Capacitance			615		pF
C_{rss}	Reverse Transfer Capacitance			380		pF
SWITCHING PARAMETERS						
Q_g	Total Gate Charge [2]	V_{GS}=-10V, V_{DS}=-80V, I_D=-60A		90		nC
Q_{gs}	Gate Source Charge			15		nC
Q_{gd}	Gate Drain Charge			35		nC
$t_{d(on)}$	Turn-On Delay Time	V_{GS}=-10V, V_{DS}=-50V, R_{GEN}=6Ω,		27		ns
$t_{d(off)}$	Turn-Off Delay Time			145		ns
$t_{d(r)}$	Turn-On Rise Time			83		ns
$t_{d(f)}$	Turn-Off Fall Time			40		ns

Thermal Resistance

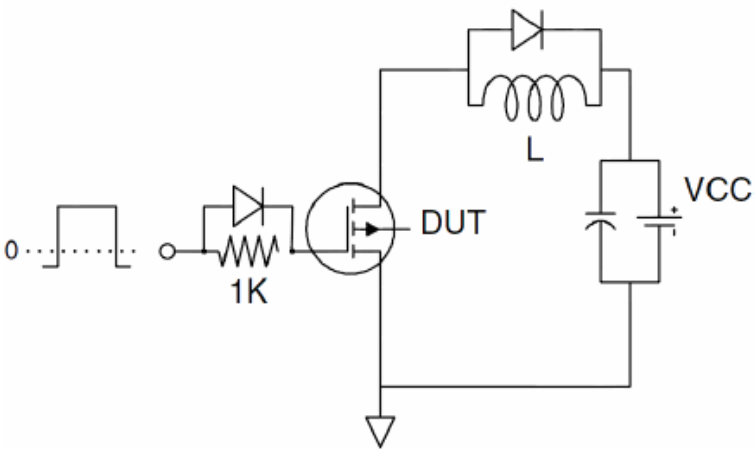
Symbol	**Parameter**	**Typ**	**Max**	**Units**
$R_{\theta JC}$	Junction to Case	-	1.25	℃/W

Test Circuits and Waveform

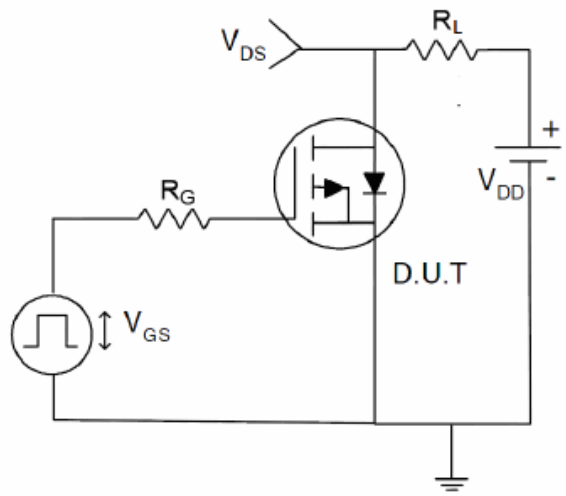
1) E_{AS} Test Circuit



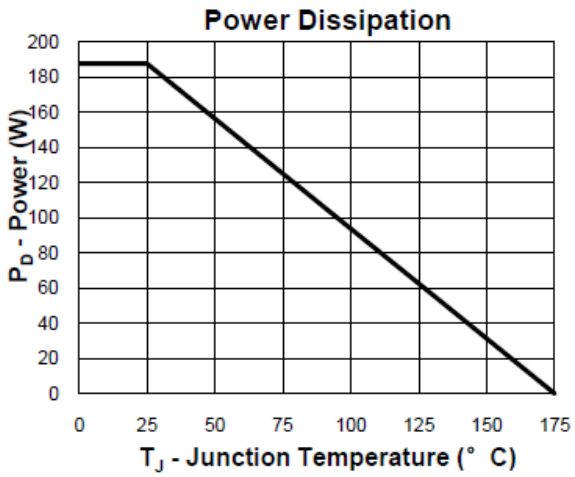
2) Gate Charge Test Circuit

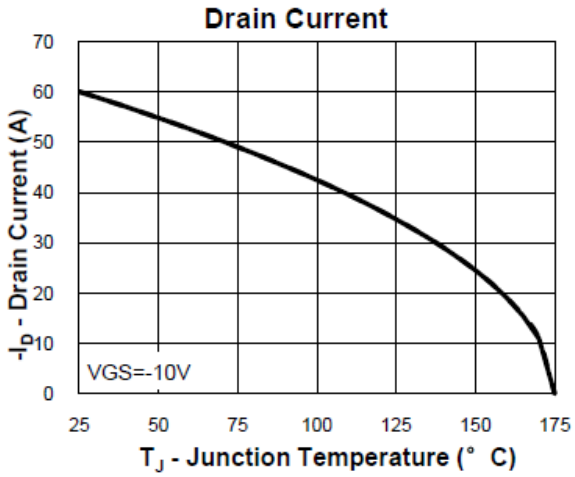


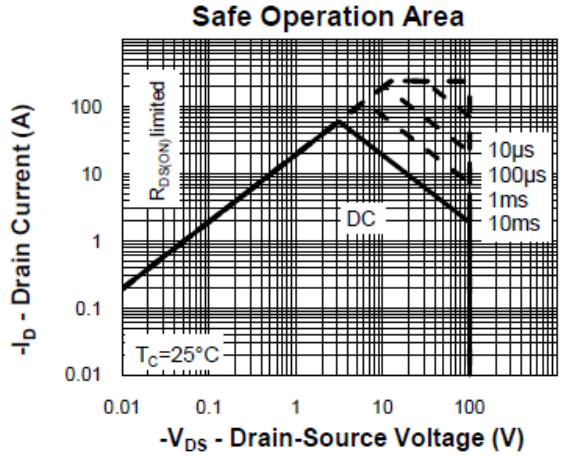
3) Switch Time Test Circuit

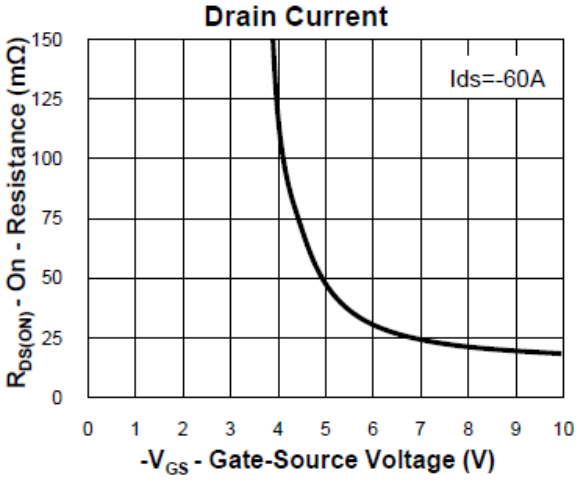


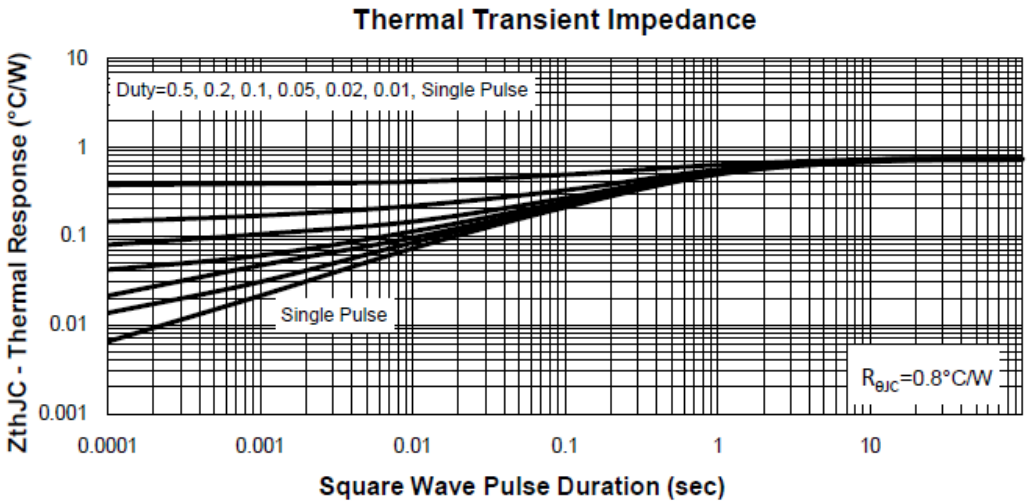
Typical Characteristics











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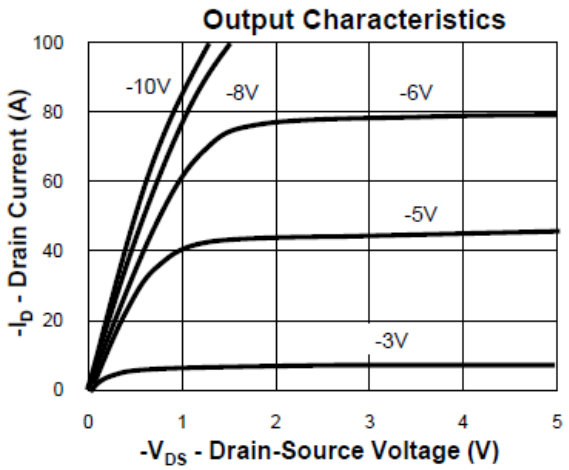
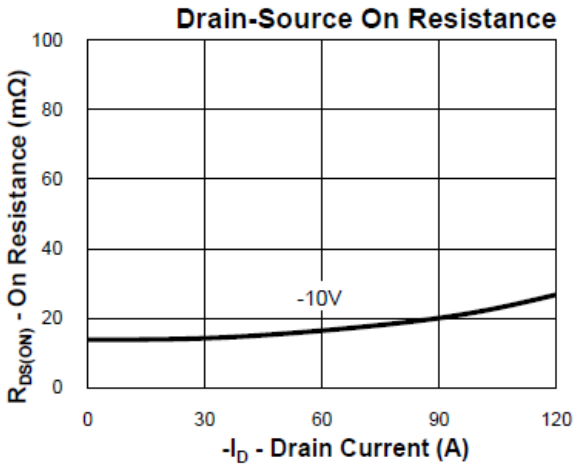
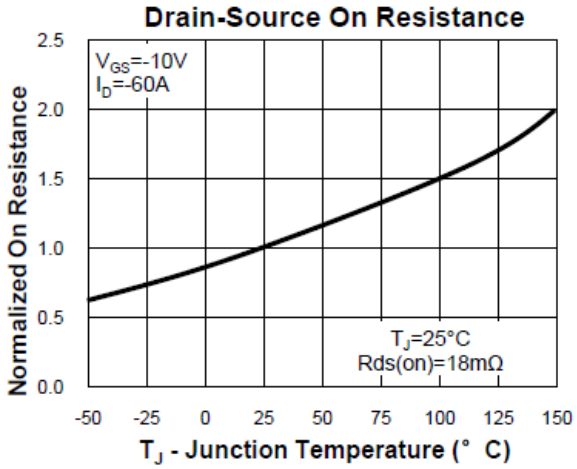
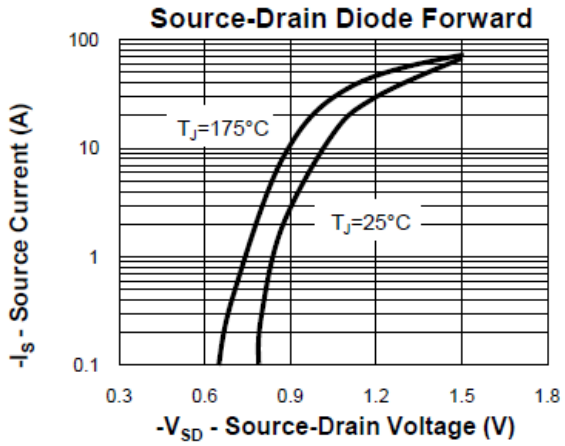
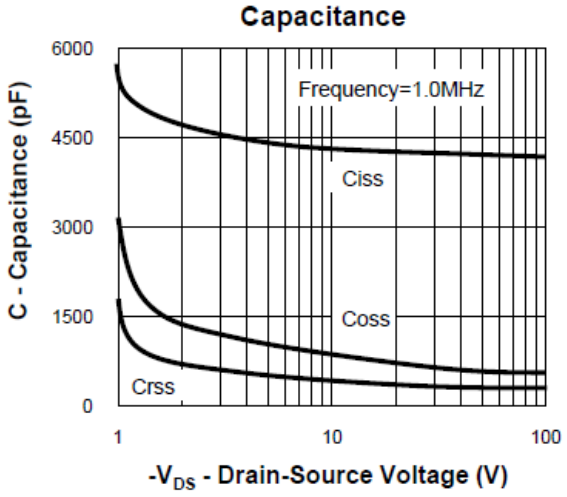
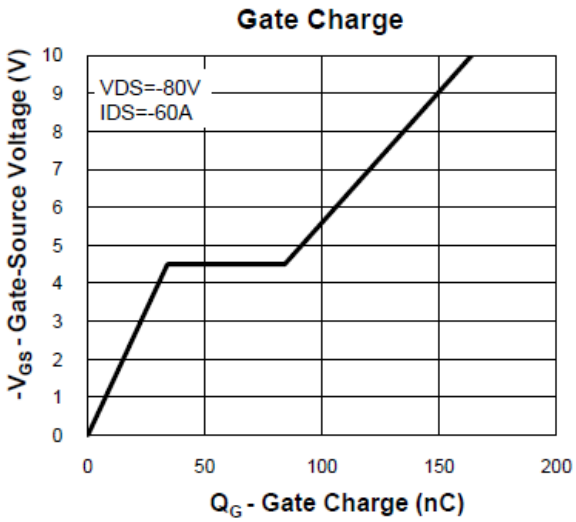






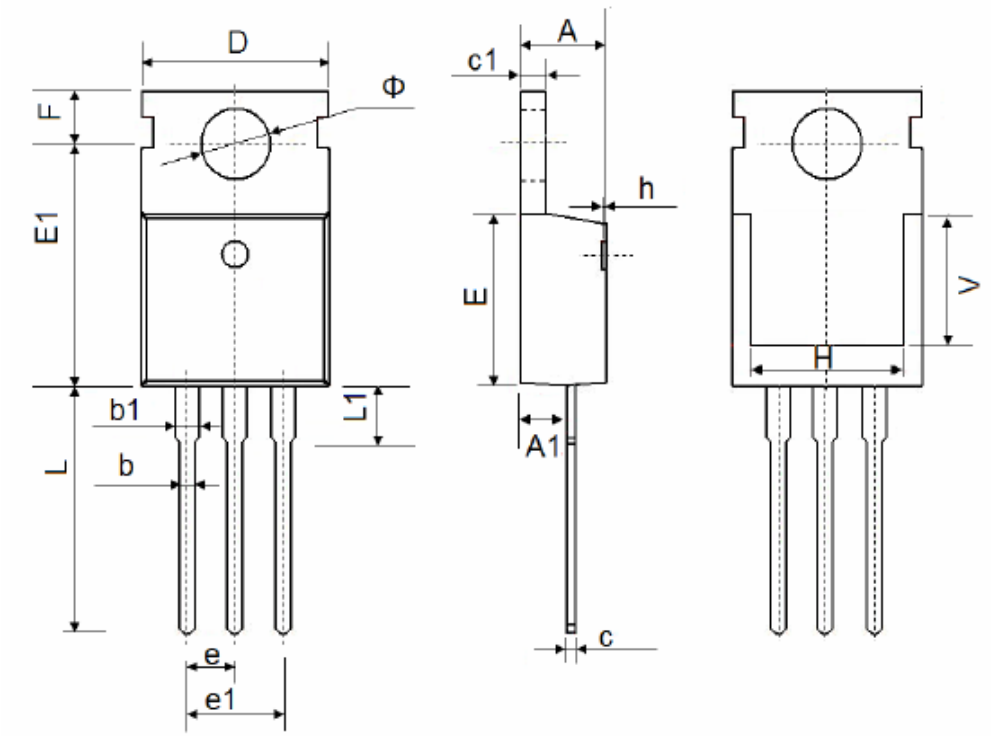






Package Outline Dimension

TO-220



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.400	4.600	0.173	0.181
A1	2.250	2.550	0.089	0.100
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.330	0.650	0.013	0.026
c1	1.200	1.400	0.047	0.055
D	9.910	10.250	0.390	0.404
E	8.9500	9.750	0.352	0.384
E1	12.650	12.950	0.498	0.510
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
F	2.650	2.950	0.104	0.116
H	7.900	8.100	0.311	0.319
h	0.000	0.300	0.000	0.012
L	12.900	13.400	0.508	0.528
L1	2.850	3.250	0.112	0.128
V	7.500 REF.		0.295 REF.	
Φ	3.400	3.800	0.134	0.150

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