

SE100P60

**P-Channel Enhancement-Mode MOSFET**

Revision: A

**General Description**

Advanced trench technology to provide excellent  $R_{DS(ON)}$ , 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

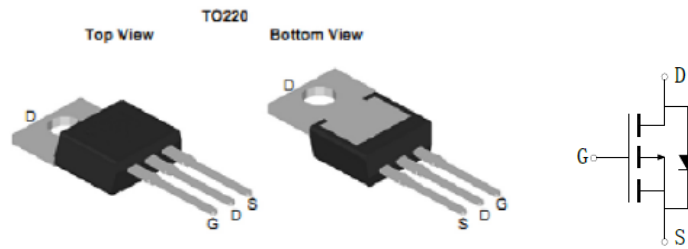
**Features**

For a single MOSFET

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

**Pin configurations**

See Diagram below



**Absolute Maximum Ratings**

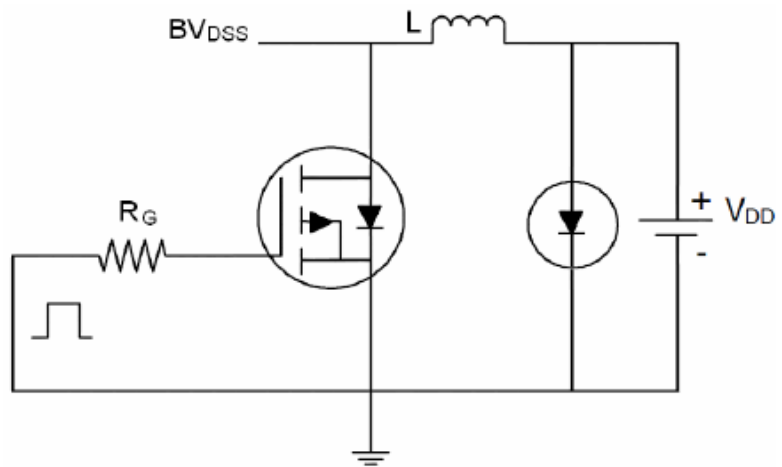
Parameter		Symbol	Rating	Units
Drain-Source Voltage		$V_{DS}$	-100	V
Gate-Source Voltage		$V_{GS}$	$\pm 25$	V
Drain Current	Continuous	$I_D$	-60	A
	Pulsed		-240	
Total Power Dissipation	@TA=25°C	$P_D$	188	W
Operating Junction Temperature Range		$T_J$	-55 to 150	°C

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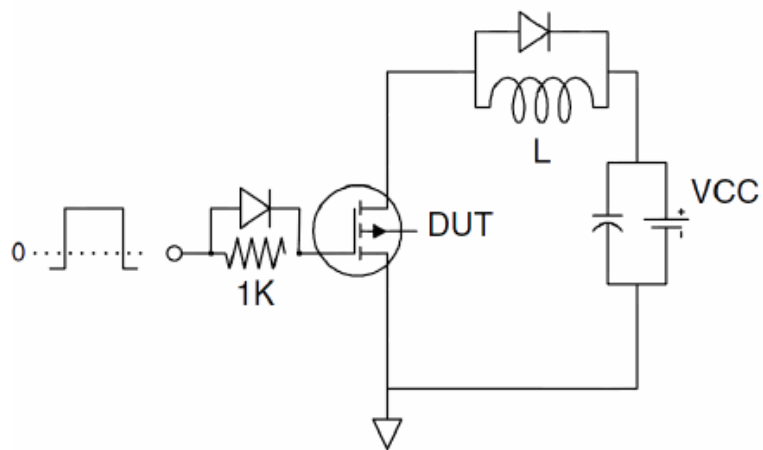
Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS (Note 2)</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	I <sub>D</sub> =-250μA, V <sub>GS</sub> =0 V	-100			V
I <sub>DSS</sub>	Drain to Source Leakage Current	V <sub>DS</sub> = -100V, V <sub>GS</sub> =0V			-1	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> = 25V			100	μA
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =-250μA	-2		-4	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =-10V, I <sub>D</sub> =-60A	-	18	25	mΩ
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =-50V, I <sub>D</sub> =-10A	5			S
<b>DYNAMIC PARAMETERS</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V, V <sub>DS</sub> =-50V, f=1MHz		4200		pF
C <sub>oss</sub>	Output Capacitance			615		pF
C <sub>rss</sub>	Reverse Transfer Capacitance			380		pF
<b>SWITCHING PARAMETERS</b>						
Q <sub>g</sub>	Total Gate Charge <sup>2</sup>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-80V, I <sub>D</sub> =-60A		90		nC
Q <sub>gs</sub>	Gate Source Charge			15		nC
Q <sub>gd</sub>	Gate Drain Charge			35		nC
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-50V, R <sub>GEN</sub> =6Ω,		27		ns
t <sub>d(off)</sub>	Turn-Off Delay Time			145		ns
t <sub>d(r)</sub>	Turn-On Rise Time			83		ns
t <sub>d(f)</sub>	Turn-Off Fall Time			40		ns
<b>Thermal Resistance</b>						
Symbol	Parameter		Typ	Max	Units	
R <sub>θJC</sub>	Junction to Case		-	1.25	°C/W	

Test Circuits and Waveform

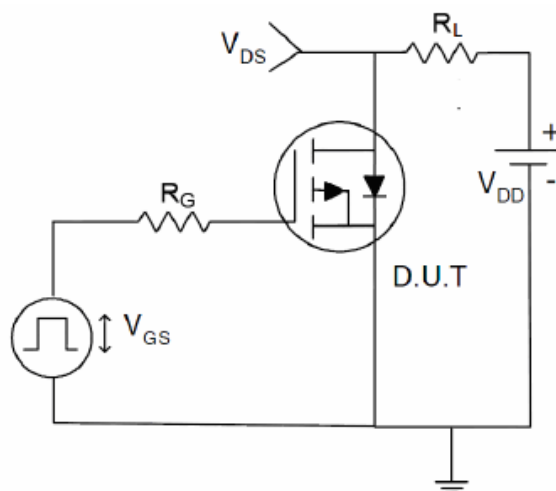
1)  $E_{AS}$  Test Circuit



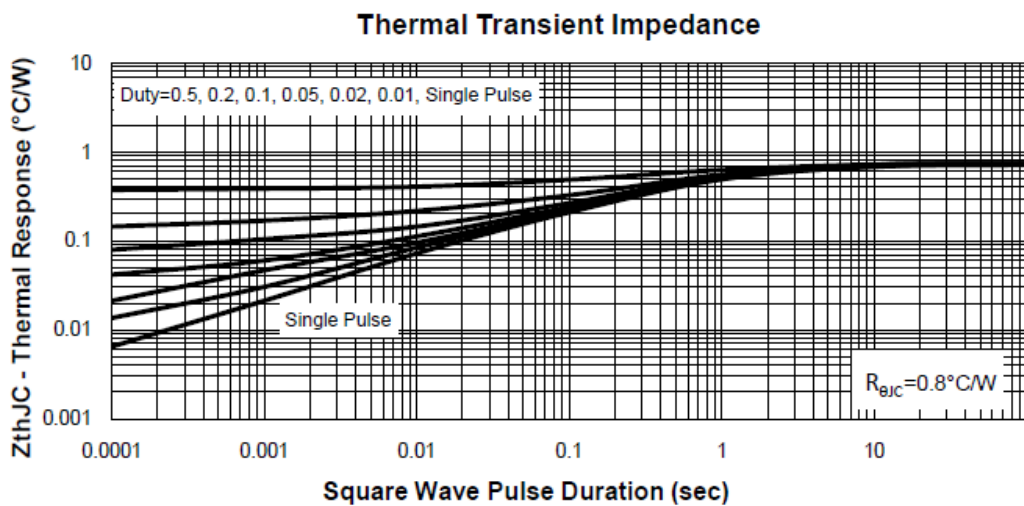
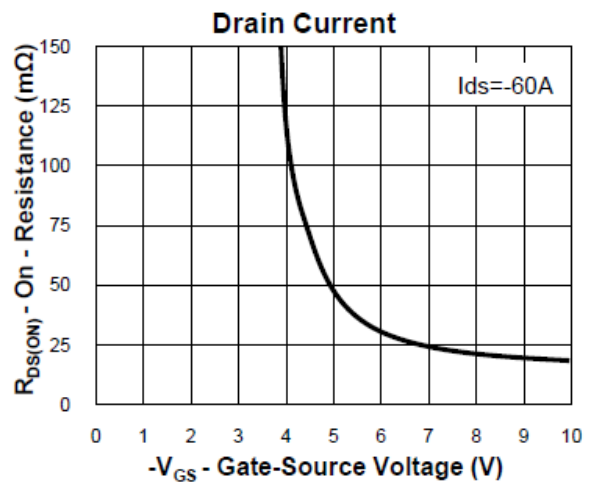
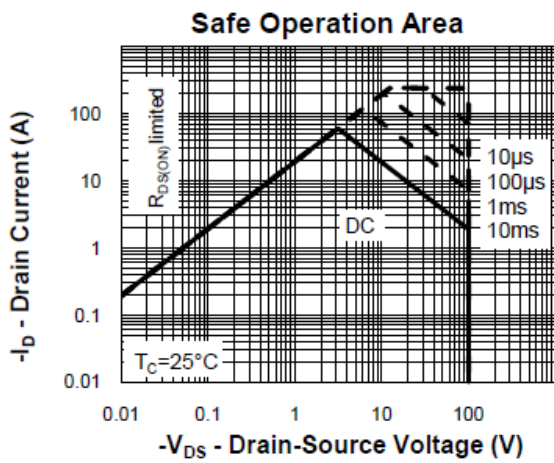
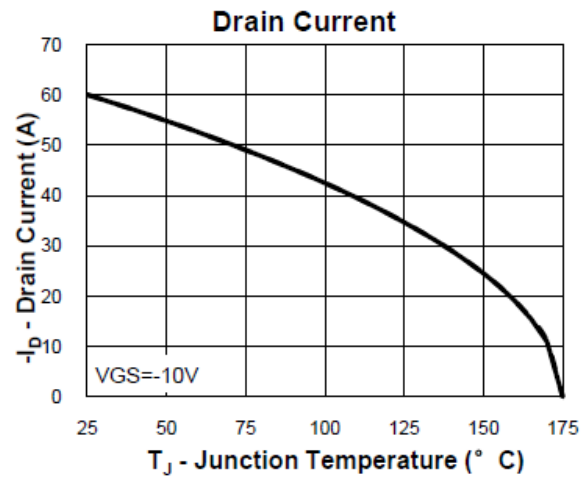
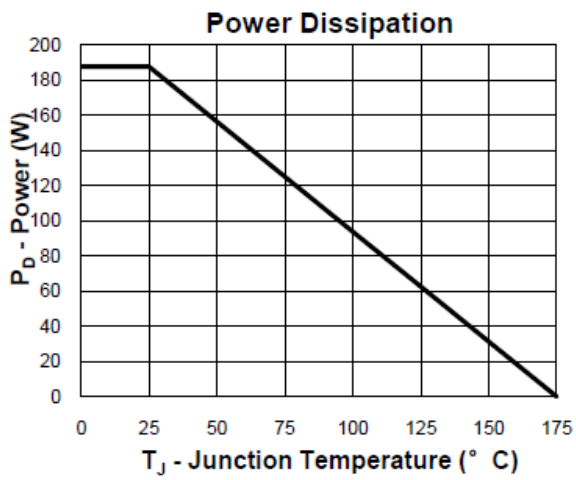
2) Gate Charge Test Circuit



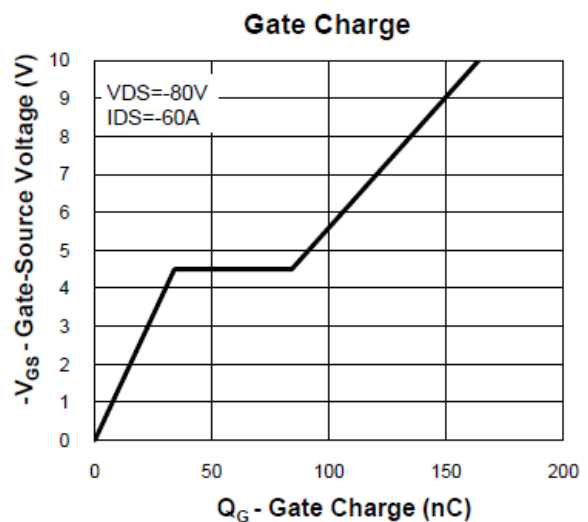
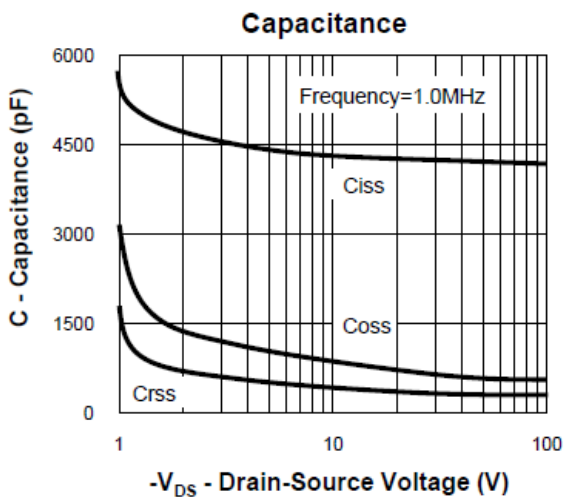
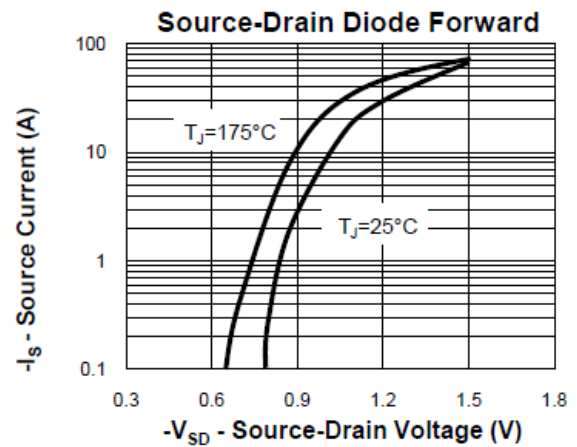
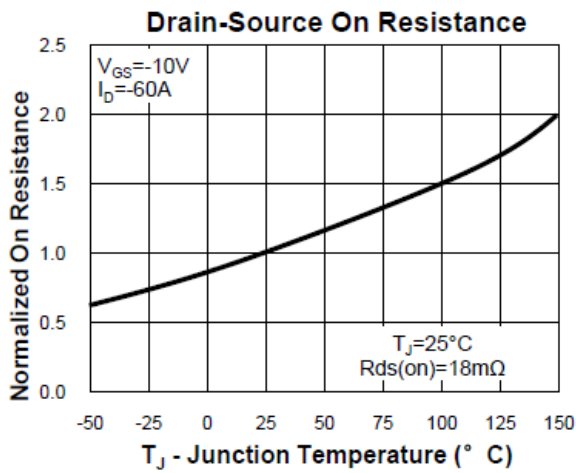
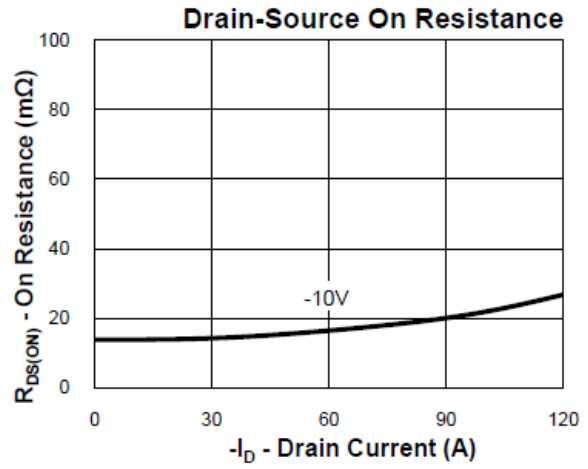
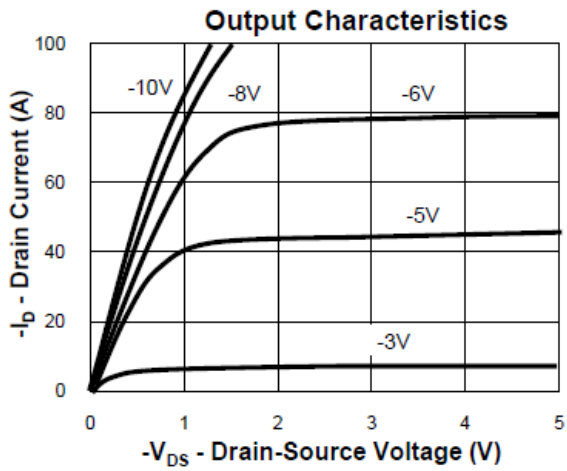
3) Switch Time Test Circuit



Typical Characteristics



Typical Characteristics





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