

SE60P50B

P-Channel Enhancement-Mode MOSFET

Revision: A

General Description

Thigh Density Cell Design For Ultra Low On-Resistance Fully Characterized Avalanche Voltage and Current Improved Shoot-Through FOM

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

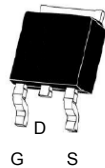
Features

For a single MOSFET

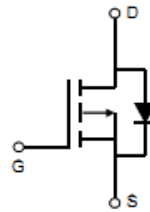
- $V_{DS} = -60V$
- $R_{DS(ON)} = 12m\Omega @ V_{GS}=-10V$

Pin configurations

See Diagram below



TO-252



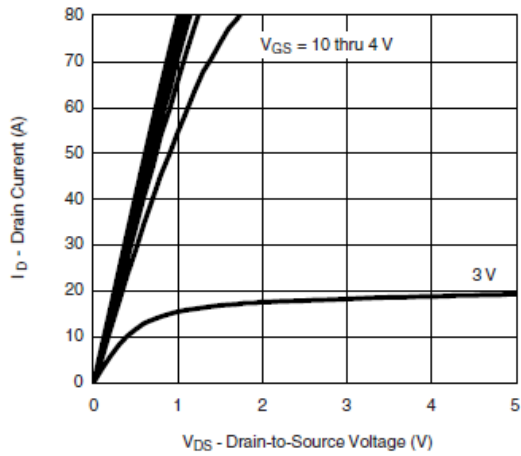
Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current	Continuous	I_D	-50	A
	Pulsed		-80	
Total Power Dissipation	@TA=25°C	P_D	113	W
Operating Junction Temperature Range		T_J	-55 to 150	°C

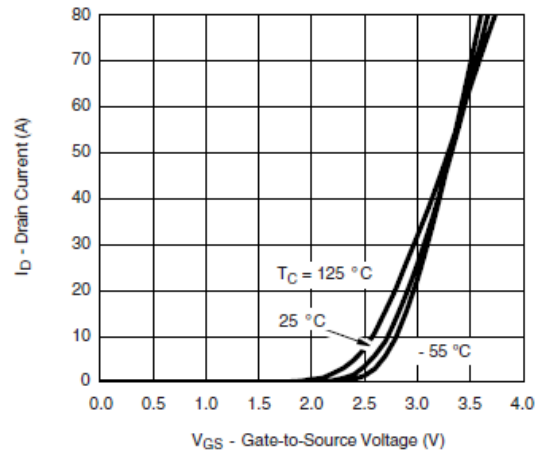
SE60P50B

Electrical Characteristics (T _J =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS (Note 2)						
B _V DSS	Drain-Source Breakdown Voltage	I _D =-250μA, V _{GS} =0V	-60			V
I _{DSS}	Drain to Source Leakage Current	V _{DS} = -60V, V _{GS} =0V			1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =20 V			100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D =250μA	-1		-3	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-10V, I _D =-17A	-	12	15	mΩ
g _{FS}	Forward Transconductance	V _{DS} =-15V, I _D =-17A		61		S
DYNAMIC PARAMETERS						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-25V, f=1MHz		4950		pF
C _{oss}	Output Capacitance			480		pF
C _{rss}	Reverse Transfer Capacitance			405		pF
SWITCHING PARAMETERS						
Q _g	Total Gate Charge ²	V _{GS} =-10V, V _{DS} =-30V, I _D =-50A		110	165	nC
Q _{gs}	Gate Source Charge			19		nC
Q _{gd}	Gate Drain Charge			28		nC
t _{d(on)}	Turn-On Delay Time	V _{GS} =-10V, V _{DS} =-30V, R _{GEN} =6Ω I _D =-50A		15	23	ns
t _{d(off)}	Turn-Off Delay Time			175	260	ns
t _{d(r)}	Turn-On Rise Time			70	105	ns
t _{d(f)}	Turn-Off Fall Time			175	260	ns
Thermal Resistance						
Symbol	Parameter		Typ	Max	Units	
R _{θJC}	Junction to Case		-	3.6	°C/W	

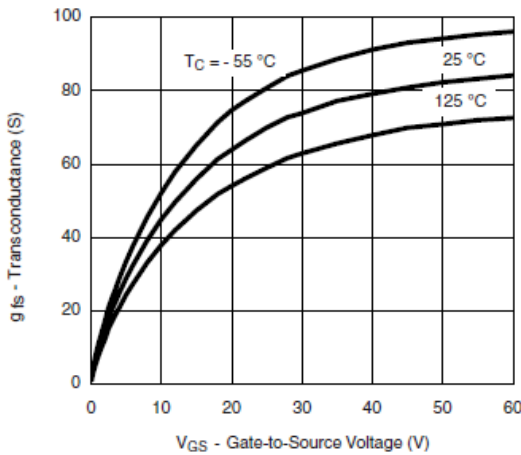
Typical Characteristics



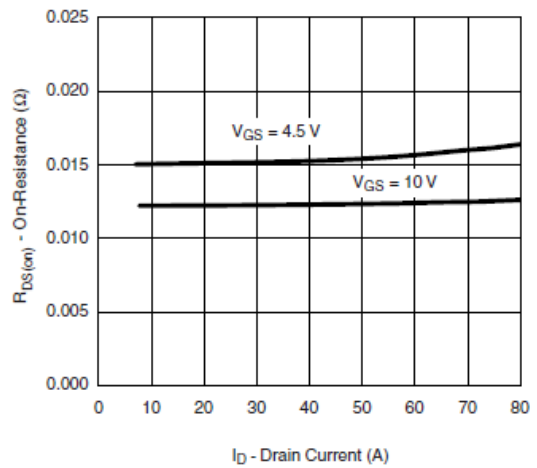
Output Characteristics



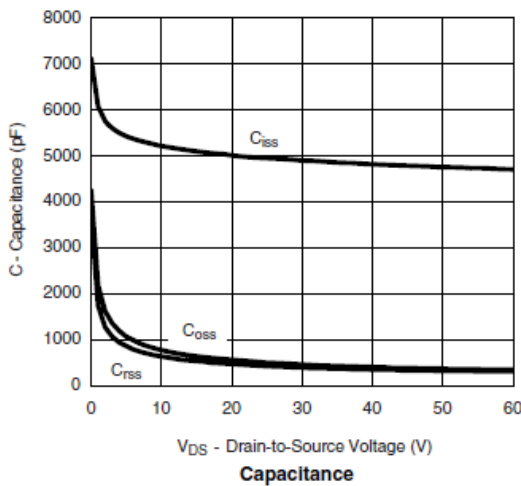
Transfer Characteristics



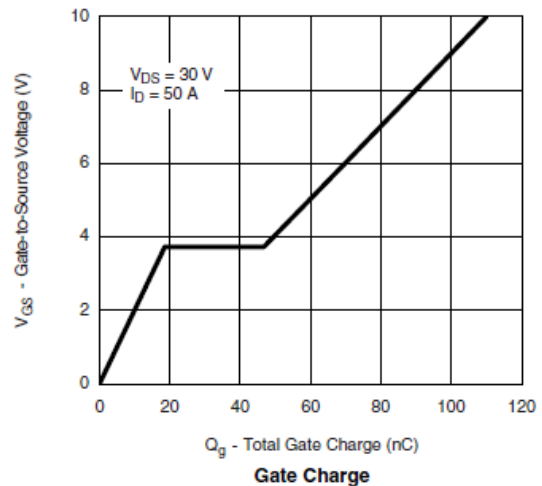
Transconductance



On-Resistance vs. Drain Current

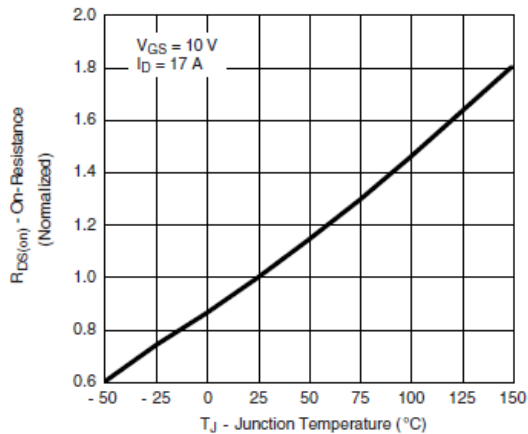


Capacitance

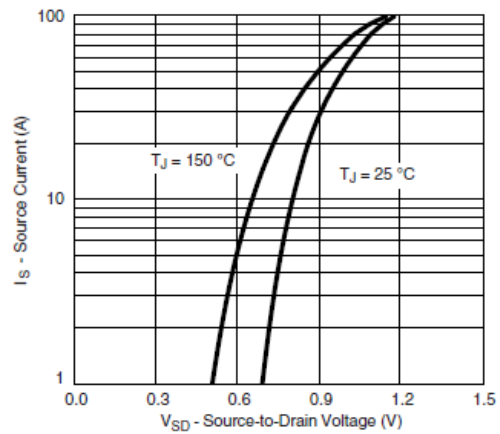


Gate Charge

Typical Characteristics

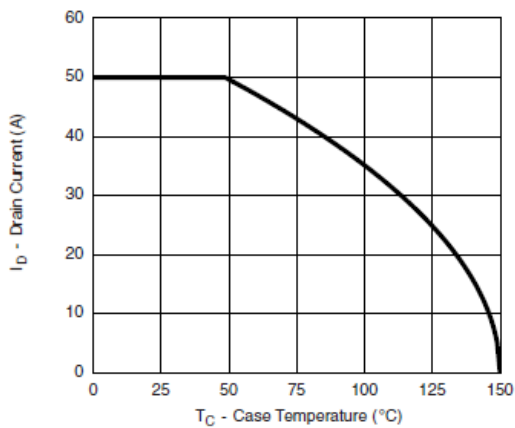


On-Resistance vs. Junction Temperature

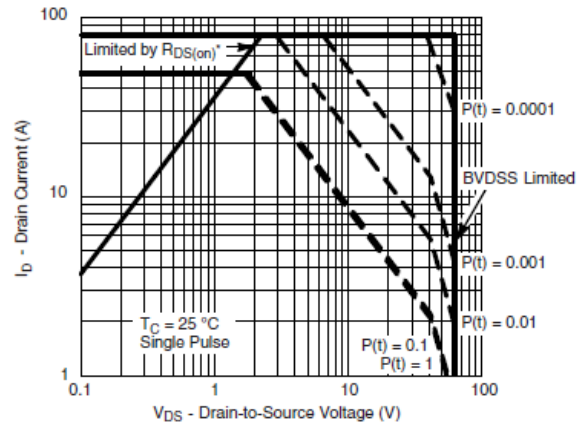


Source-Drain Diode Forward Voltage

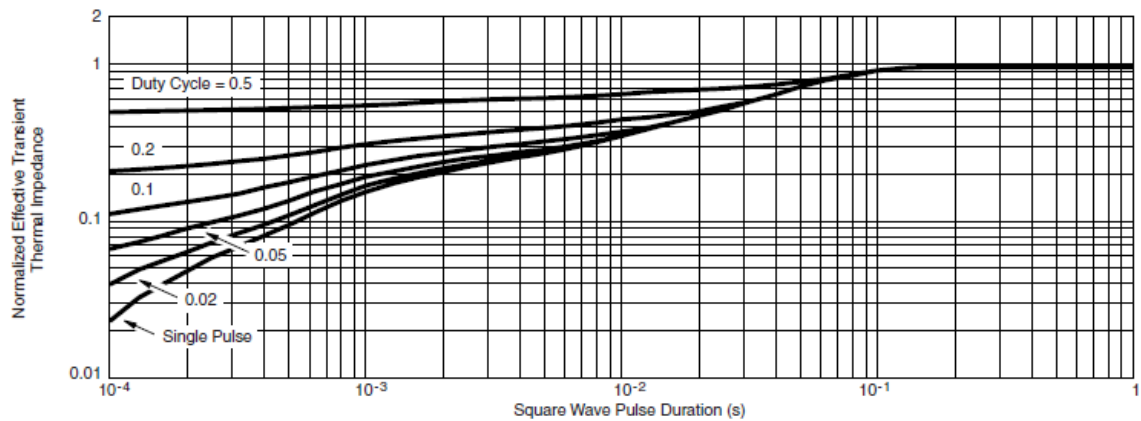
THERMAL RATINGS



Drain Current vs. Case Temperature



Safe Operating Area
* $V_{GS} >$ minimum V_{GS} at which $R_{DS(on)}$ is specified

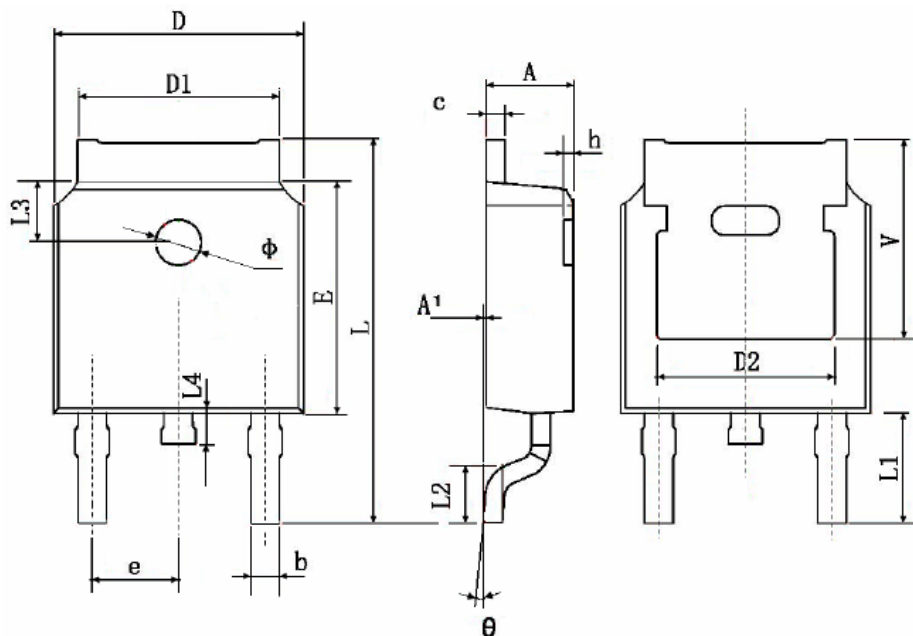


Normalized Thermal Transient Impedance, Junction-to-Case

SE60P50B

Package Outline Dimension

TO-252



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	

The SINO-IC logo is a registered trademark of ShangHai Sino-IC Microelectronics Co., Ltd.

© 2005 SINO-IC - Printed in China - All rights reserved.

SHANGHAI SINO-IC MICROELECTRONICS CO., LTD

Add: Building 3, Room 3401-03, No.200 Zhangheng Road,
ZhangJiang Hi-Tech Park, Pudong, Shanghai 201203, China

Phone: +86-21-33932402 33932403

33932405 33933508 33933608

Fax: +86-21-33932401

Email: webmaster@sino-ic.com

Website: <http://www.sino-ic.com>