

SED3030M

N-Channel Enhancement-Mode MOSFET

Revision: A

General Description

This type used advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of application

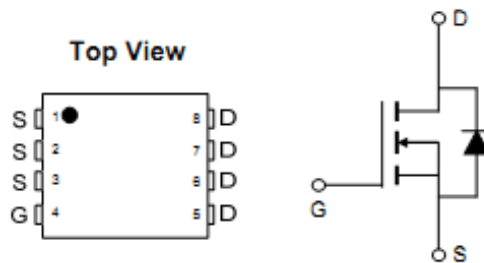
Features

For a single MOSFET

- $V_{DS} = 30V$
- $R_{DS(ON)} = 7.4m\Omega @ V_{GS}=10V$

Pin configurations

See Diagram below



Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current	Continuous	I_D	30	A
	Pulsed		80	
Total Power Dissipation	@TA=25°C	P_D	40	W
Single pulse avalanche energy		E_{AS}	72	mJ
Operating Junction Temperature Range		T_J	-55 to 175	°C

Thermal Resistance

Symbol	Parameter	Typ	Max	Units
$R_{\theta JC}$	Thermal Resistance Junction to Case	-	3	°C/W

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	30			V
I _{DSS}	Drain to Source Leakage Current	V _{DS} =30V, V _{GS} =0V			1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =20V			100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D =250μA	1		1.7	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =25A	-	7.4	8.5	mΩ
g _{FS}	Forward Transconductance	V _{DS} =60V, I _D =7.5A	26			S
DYNAMIC PARAMETERS						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, f=1MHz		680		pF
C _{oss}	Output Capacitance			102		pF
C _{rss}	Reverse Transfer Capacitance			71		pF
SWITCHING PARAMETERS						
Q _g	Total Gate Charge ²	V _{GS} =10V, V _{DS} =15V, I _D =20A		17.5		nC
Q _{gs}	Gate Source Charge			43		nC
Q _{gd}	Gate Drain Charge			4.1		nC
t _{d(on)}	Turn-On Delay Time	V _{GS} =10V, V _{DS} =15V, R _{GEN} =3Ω I _D =20A		5		ns
t _{d(off)}	Turn-Off Delay Time			19		ns
t _{d(r)}	Turn-On Rise Time			12		ns
t _{d(f)}	Turn-Off Fall Time			6		ns
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V,I _S =24A			1.2	V
I _S	Diode Forward Current				30	A
t _{rr}	Reverse Recovery Time	TJ=25℃,IF=20A Di/dt=100A/μs		19		nS
Q _{rr}	Reverse Recovery Charge			10		nC
t _{on}	Forward Turn-On Time	Intrinsic turn-on time is negligible(turn-on is dominated by LS				

Typical Characteristics

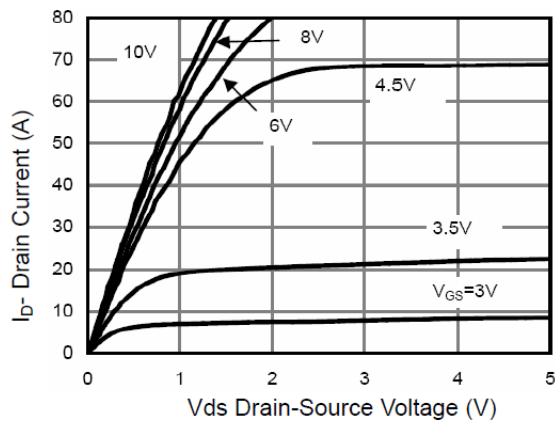


Figure 1 Output Characteristics

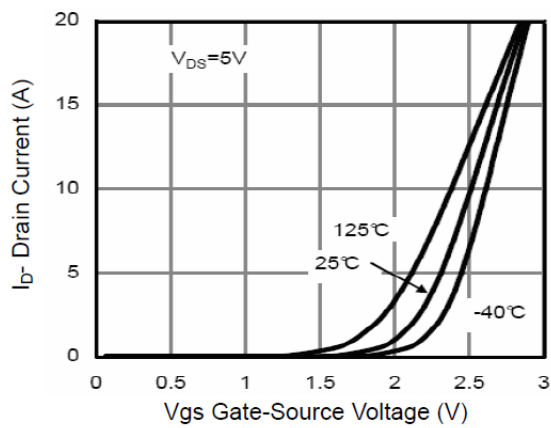


Figure 2 Transfer Characteristics

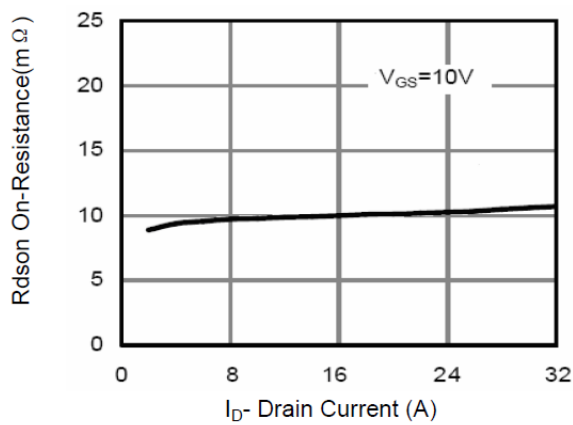


Figure 3 Rdson- Drain Current

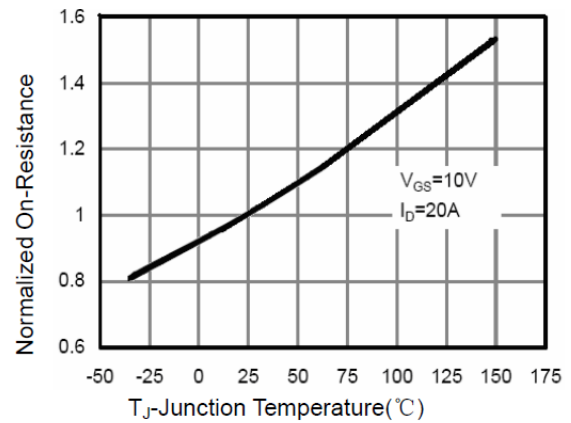


Figure 4 Rdson-Junction Temperature

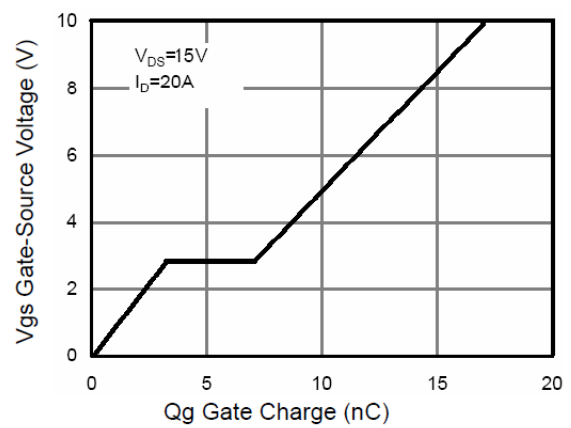


Figure 5 Gate Charge

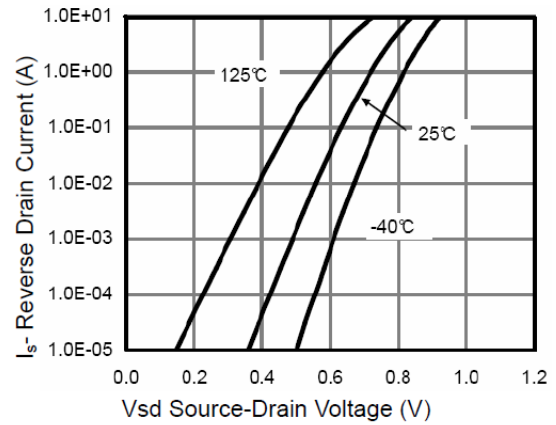


Figure 6 Source- Drain Diode Forward

Typical Characteristics

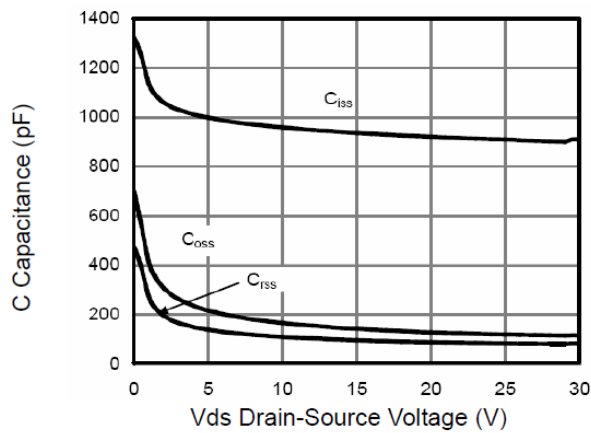


Figure 7 Capacitance vs Vds

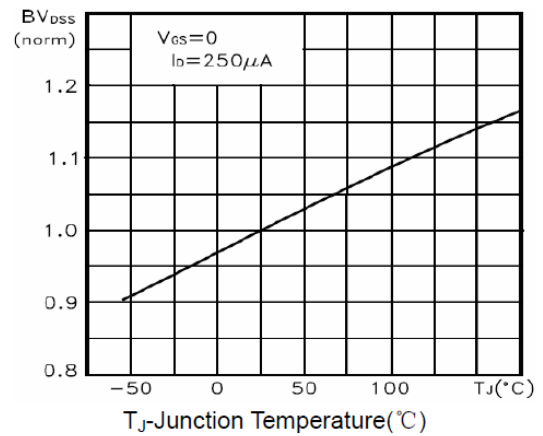


Figure 9 BV_{DSS} vs Junction Temperature

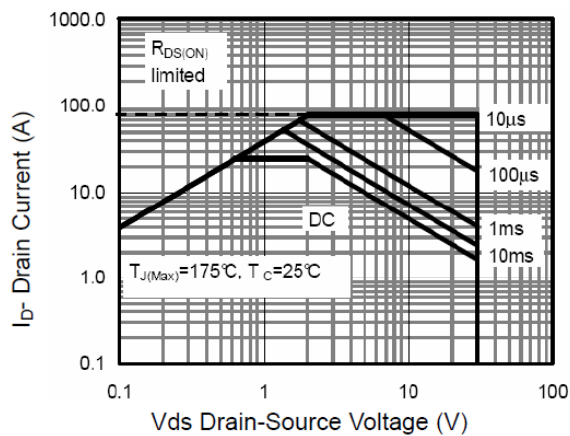


Figure 8 Safe Operation Area

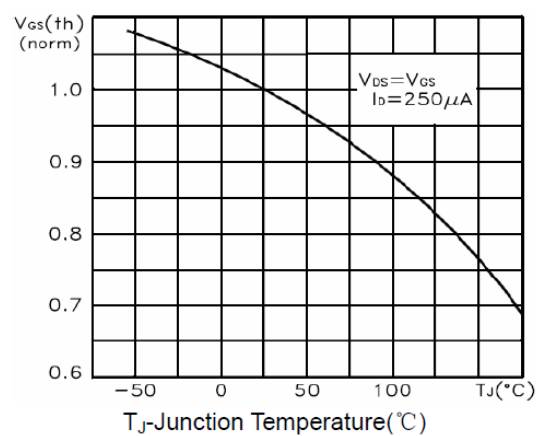


Figure 10 $V_{GS(th)}$ vs Junction Temperature

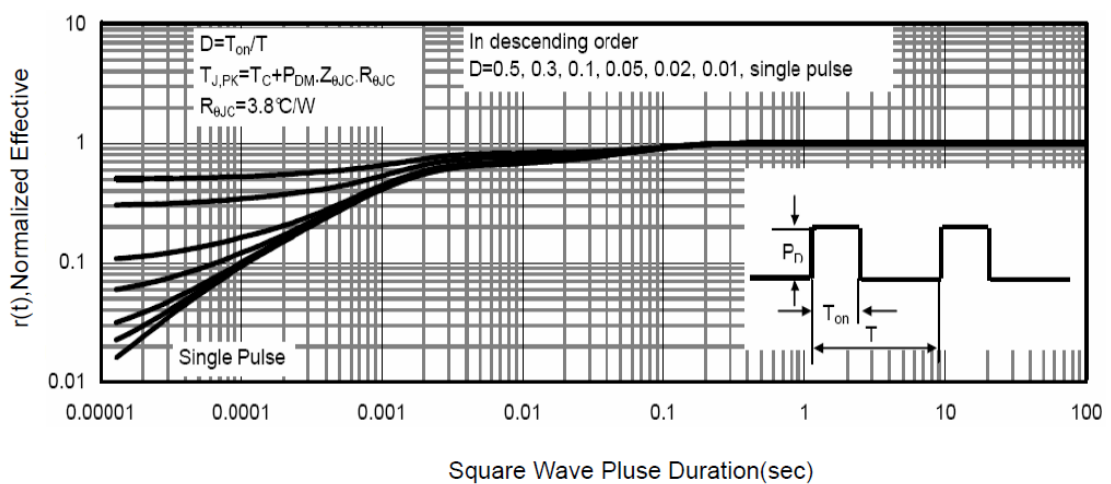
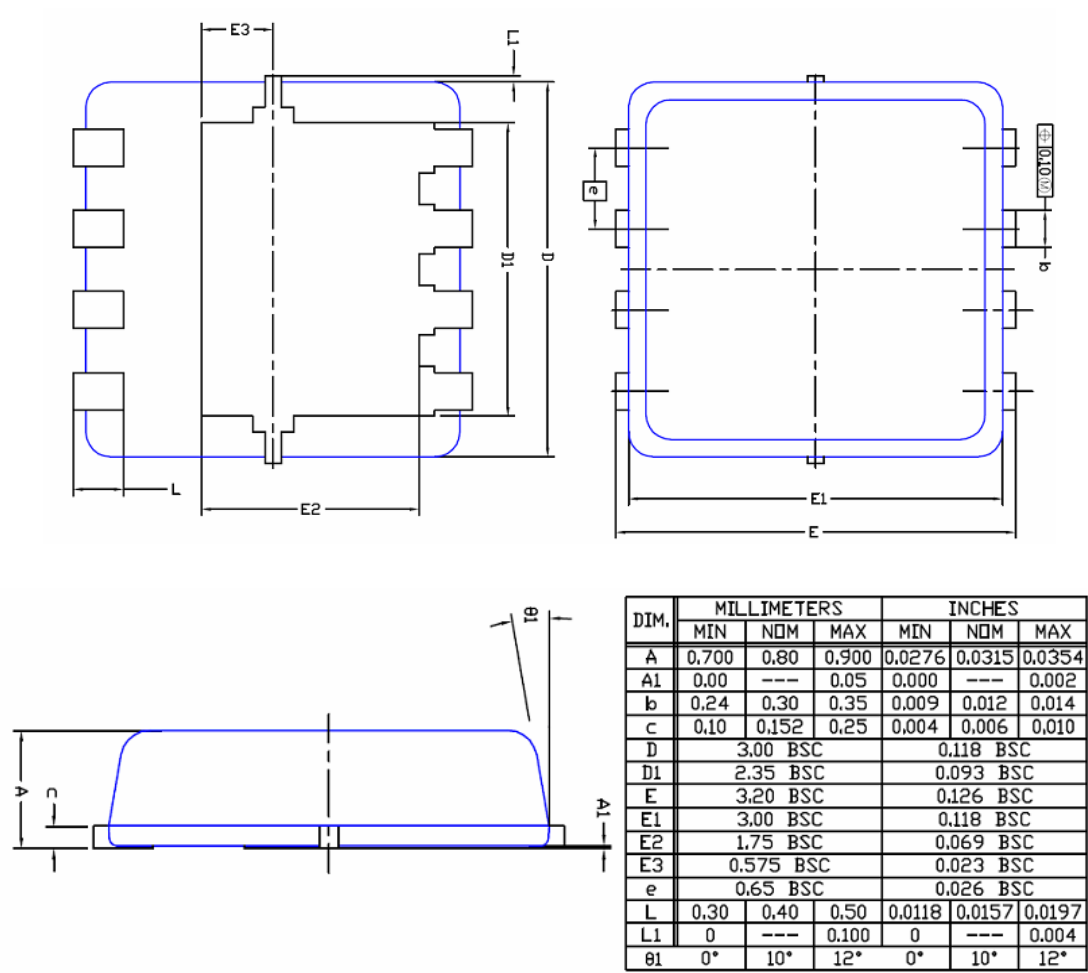


Figure 11 Normalized Maximum Transient Thermal Impedance

SE3D080M

Package Outline Dimension

DFN3X3 EP



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.net

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