SHANGHAI SINO-IC
MICROELECTRONICS CO., LTD.

Nov 2014

SE80100

N-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

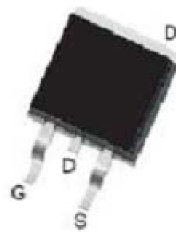
Features

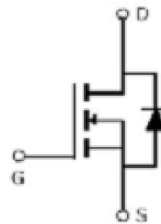
For a single MOSFET

- V_{DS} = 80V
- $R_{DS(ON)}$ = 6.8mΩ @ V_{GS}=10

Pin configurations

See Diagram below





Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	80	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current	Continuous	I_D	100	A
	Pulsed		370	
Total Power Dissipation	@TA=25℃	P_D	125	W
Operating Junction Temperature Range		T_J	-55 to 175	℃

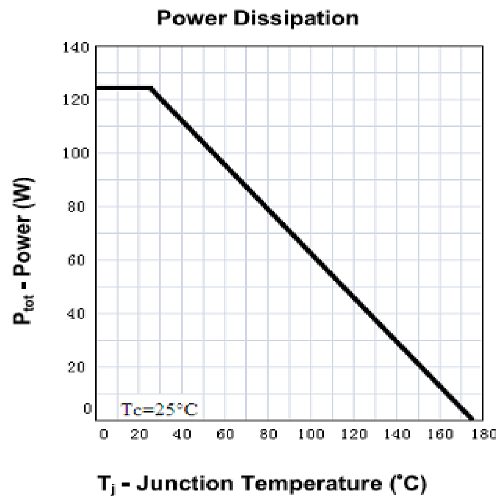
Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	**Parameter**	**Test Conditions**	**Min**	**Typ**	**Max**	**Units**
OFF CHARACTERISTICS (Note 2)						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=250μA, V_{GS}=0 V	80			V
I_{DSS}	Drain to Source Leakage Current	V_{DS}= 64V, V_{GS}=0V			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	2		4	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance [2]	V_{GS}=10V, I_D=40A	-	6.8	8	mΩ
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=40V, f=1MHz		4120		pF
C_{oss}	Output Capacitance			520		pF
C_{rss}	Reverse Transfer Capacitance			200		pF
SWITCHING PARAMETERS						
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=64V, I_D=40A		58		nC
Q_{gs}	Gate Source Charge			15		nC
Q_{gd}	Gate Drain Charge			19		nC
$t_{d(on)}$	Turn-On Delay Time	V_{GS}=10V, V_{DS}=40V, R_{GEN}=4.7Ω I_D=2A		34		ns
$t_{d(off)}$	Turn-Off Delay Time			103		ns
$t_{d(r)}$	Turn-On Rise Time			95		ns
$t_{d(f)}$	Turn-Off Fall Time			33		ns

Thermal Resistance

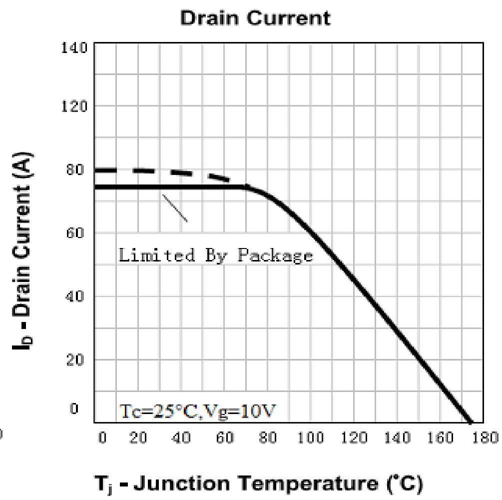
Symbol	Parameter	Typ	Max	Units
$R_{θJC}$	Thermal Resistance Junction to Case(t≤10s)	-	1.2	℃/W

Typical Characteristics

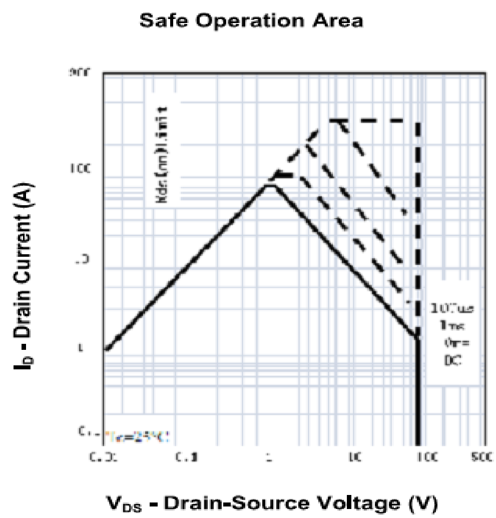
Power Dissipation



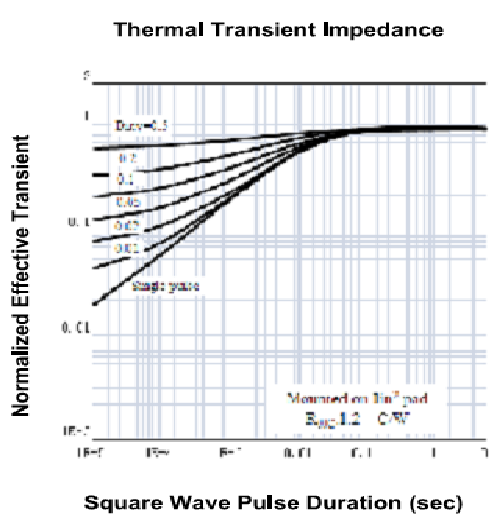
Drain Current



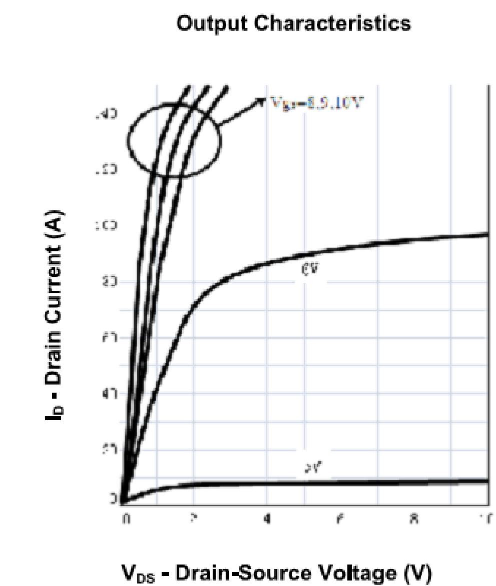
Safe Operation Area



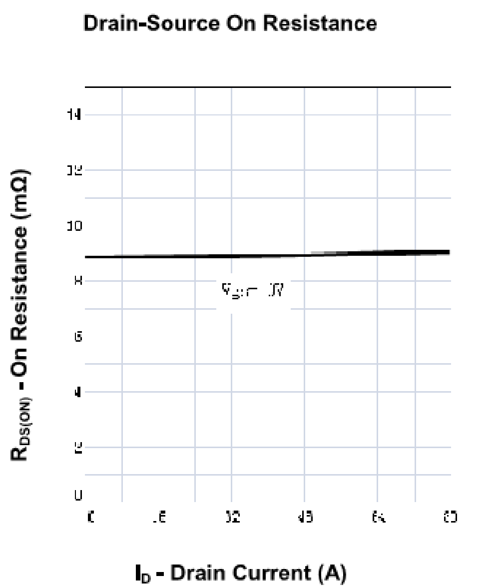
Thermal Transient Impedance



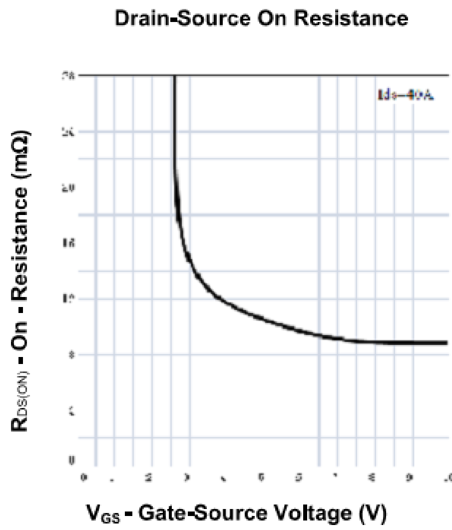
Output Characteristics

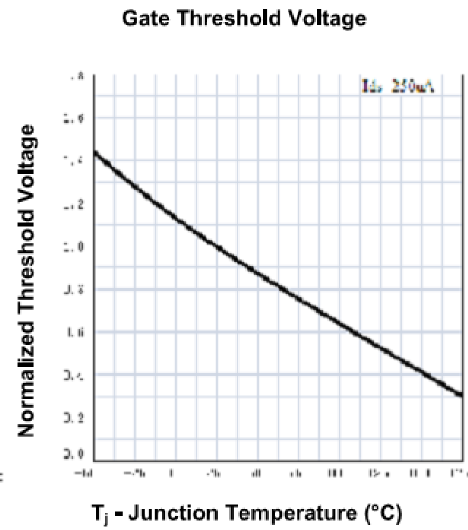


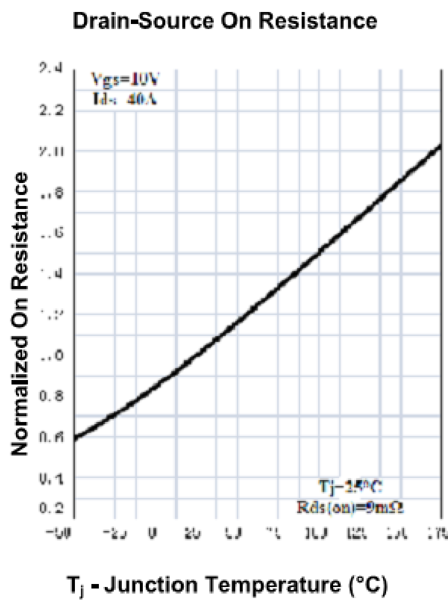
Drain-Source On Resistance

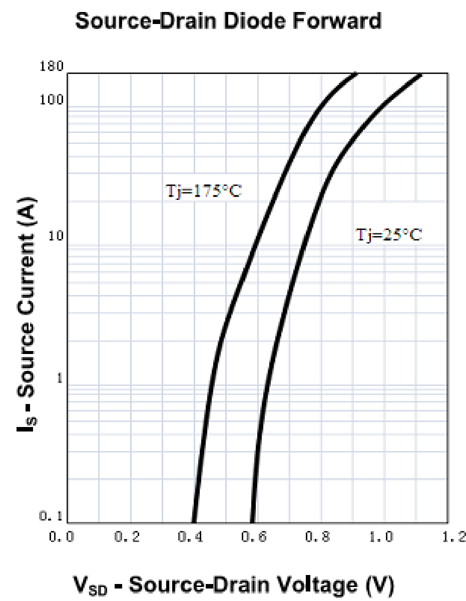


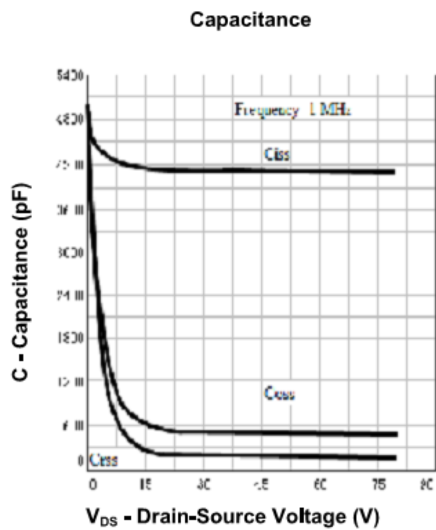
Typical Characteristics

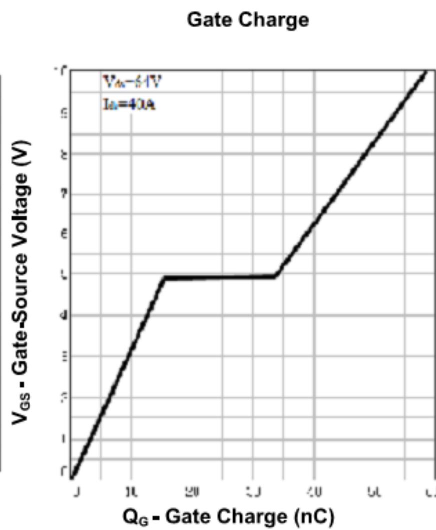






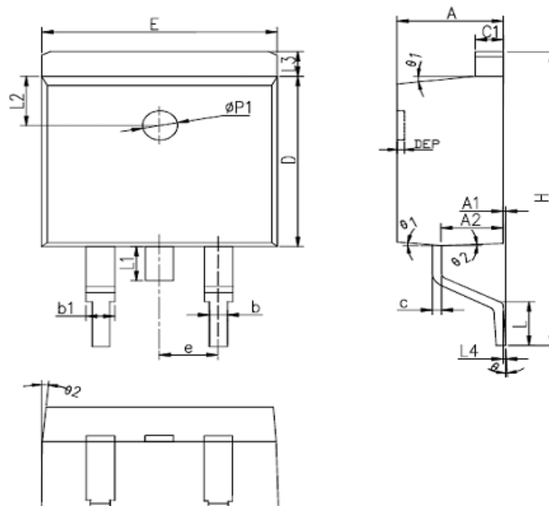






Package Outline Dimension

TO-263



SYMBOL	MM			INCH			SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX		MIN	NOM	MAX	MIN	NOM	MAX
A	4.40	4.57	4.70	0.173	0.180	0.185	L	2.00	2.30	2.60	0.079	0.090	0.102
A1	0	0.10	0.25	0	0.004	0.010	L3	1.17	1.27	1.40	0.046	0.050	0.055
A2	2.59	2.69	2.79	0.102	0.106	0.110	L1	-	-	1.70	-	-	0.067
b	0.77	-	0.90	0.030	-	0.035	L4	0.25BSC			0.01BSC		
b1	1.23	-	1.36	0.048	-	0.052	L2	2.50REF.			0.098REF.		
c	0.34	-	0.47	0.013	-	0.019	θ	0°	-	8°	0°	-	8°
C1	1.22	-	1.32	0.048	-	0.052	θ 1	5°	7°	9°	5°	7°	9°
D	8.60	8.70	8.80	0.338	0.343	0.346	θ 2	1°	3°	5°	1°	3°	5°
E	10.00	10.16	10.26	0.394	0.4	0.404	DEP	0.05	0.10	0.20	0.002	0.004	0.008
e	2.54BSC			0.1BSC			Øp1	1.40	1.50	1.60	0.055	0.059	0.063
H	14.70	15.10	15.50	0.579	0.594	0.610							

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