SHANGHAI SINO-IC MICROELECTRONICS CO., LTD.

SE8016C

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

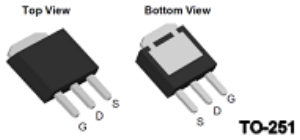
Features

For a single MOSFET

- V_{DS} = 80V
- $R_{DS(ON)}$ =12mΩ @ V_{GS}=10V

Pin configurations

See Diagram below



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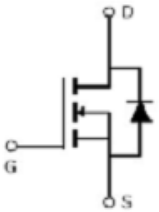


Absolute Maximum Ratings

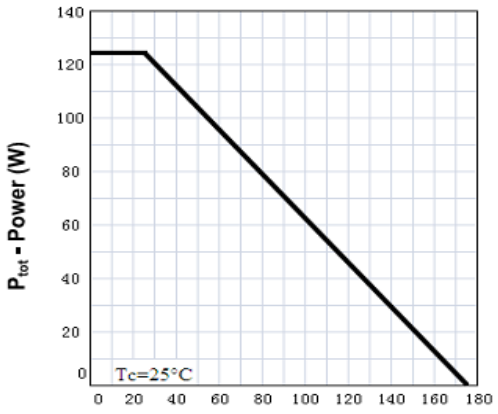
Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	80	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current	Continuous	I_D	50	A
	Pulsed		85	
Total Power Dissipation	@TA=25℃	P_D	110	W
Operating Junction Temperature Range		T_J	-55 to 175	℃

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}= 80V, 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		3	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V, I_D=40A	-	12	14	mΩ
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=40V, f=1MHz		4020		pF
C_{oss}	Output Capacitance			510		pF
C_{rss}	Reverse Transfer Capacitance			201		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

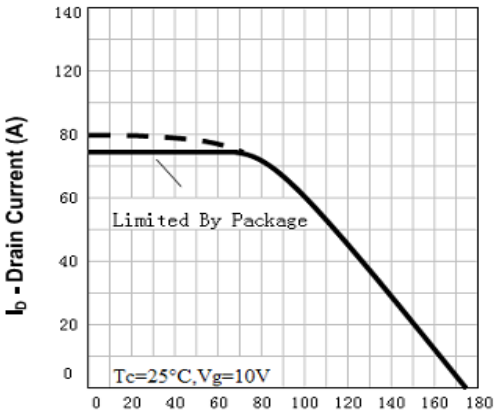
Thermal Resistance				
Symbol	**Parameter**	**Typ**	**Max**	**Units**
$R_{\theta JC}$	Thermal Resistance Junction to Case(t≤10s)	-	1.2	℃/W

Typical Characteristics

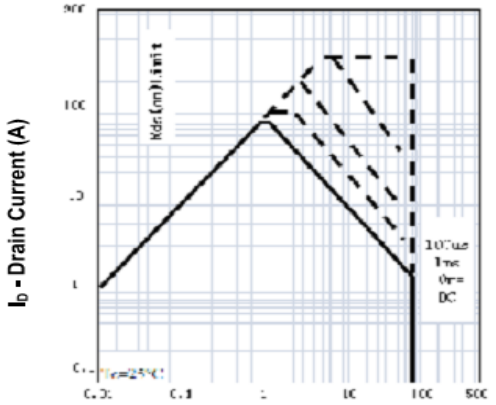
Power Dissipation



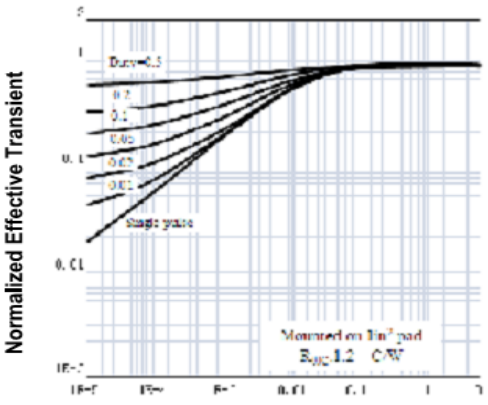
Drain Current



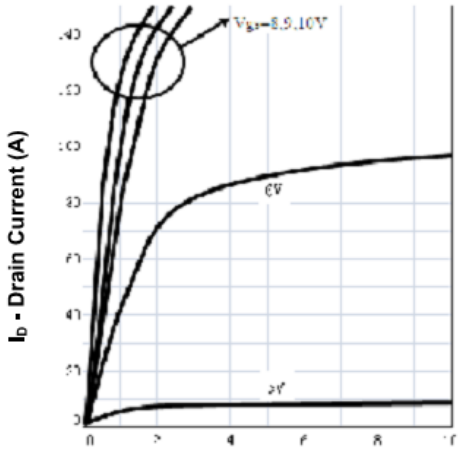
Safe Operation Area



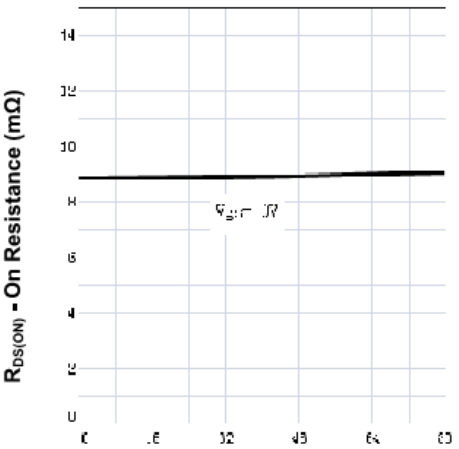
Thermal Transient Impedance



Output Characteristics

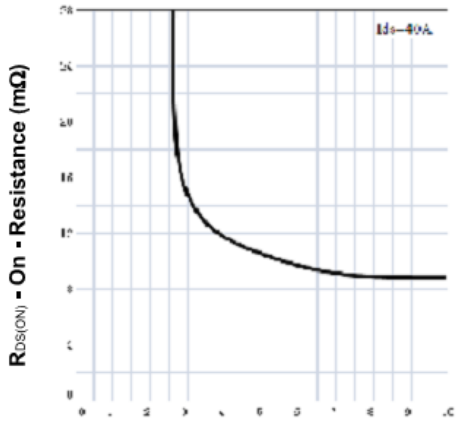


Drain-Source On Resistance

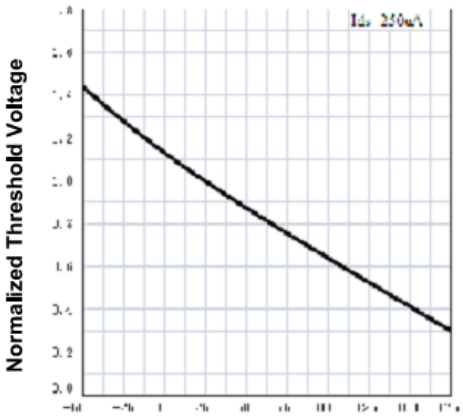


Typical Characteristics

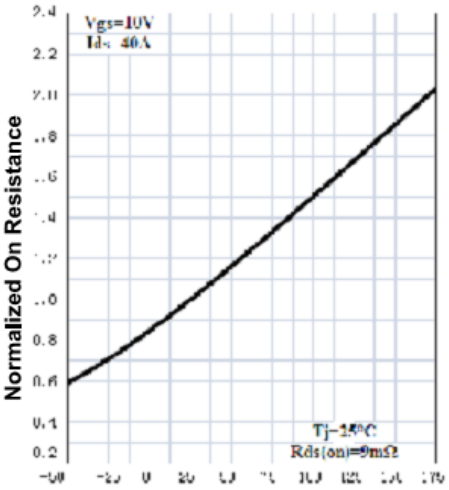
Drain-Source On Resistance



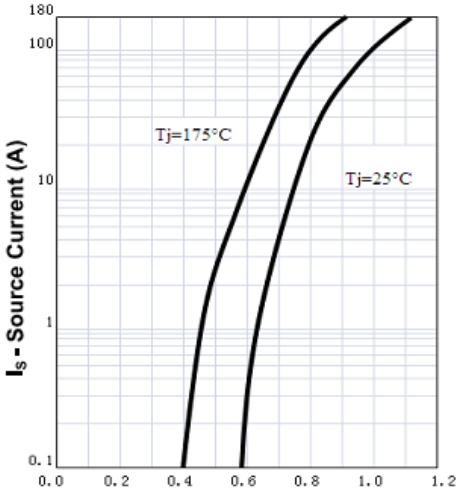
Gate Threshold Voltage



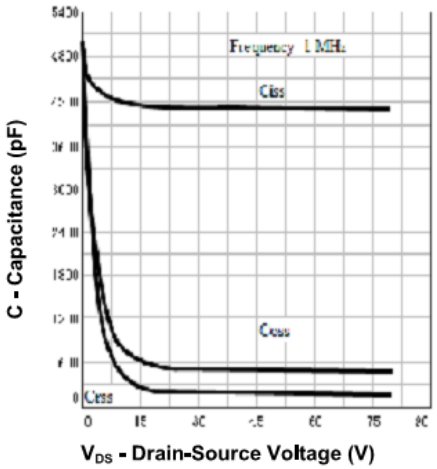
Drain-Source On Resistance



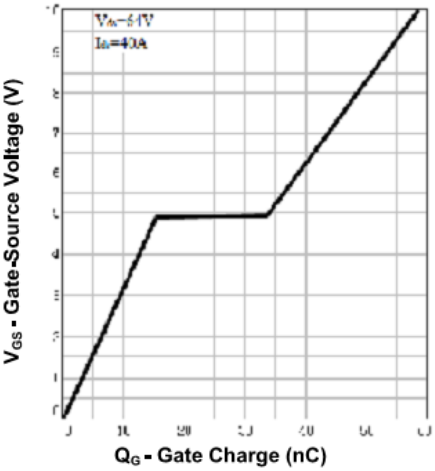
Source-Drain Diode Forward



Capacitance



Gate Charge



Package Outline Dimension

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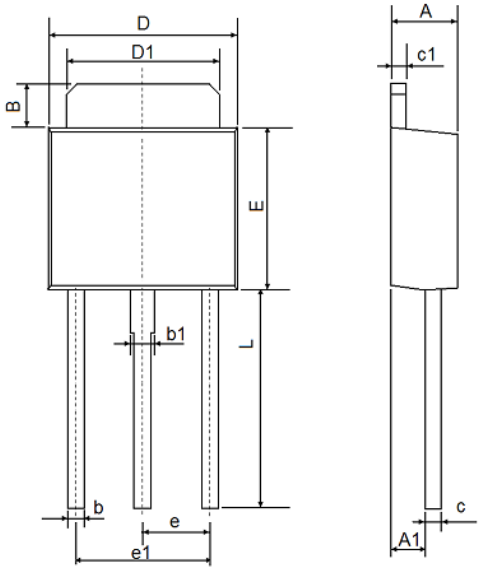

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	1.050	1.350	0.042	0.054
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP.		0.091 TYP.	
e1	4.500	4.700	0.177	0.185
L	7.500	7.900	0.295	0.311

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