SHANGHAI SINO-IC
MICROELECTRONICS CO., LTD.

June 2008
Revision:A

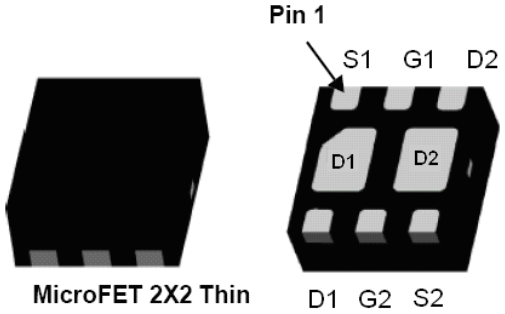
SED1023
Dual P-Channel Enhancement Mode Field Effect Transistor

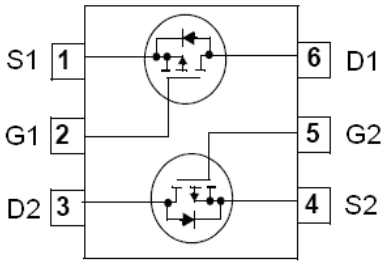
General Description

The SED1023 uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge.

Features

V_{DS}(V) = -20V
$R_{DS(ON)}$< 60mΩ (V_{GS} = -4.5V@ I_D = -4.7A)
$R_{DS(ON)}$< 100mΩ (V_{GS} = -2.5V@ I_D = -1.0A)





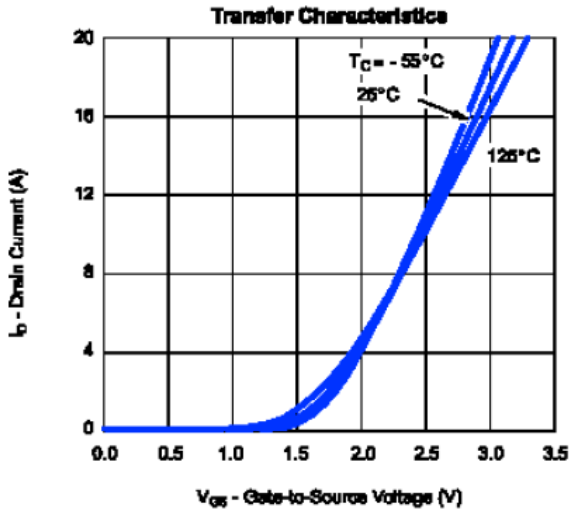
Absolute maximum ratings (Ta=25℃)

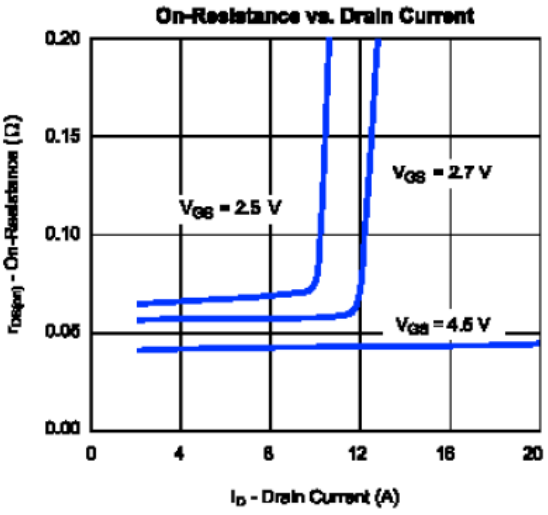
Parameter		Symbol	MOSFET1	MOSFET2	Unit
Drain-Source Voltage		V_{DS}	-20	-20	V
Gate-Source Voltage		V_{GS}	±12	±12	V
Continuous Drain Current [A]	T_A =25℃	I_D	-4.2	-4.2	A
Pulsed Drain Current [B]		I_{DM}	-15	-15	
Power Dissipation	T_A =25℃	P_D	1.5	1.5	W
	T_A =70℃		0.7	0.7	
Junction and Storage Temperature Rang		I_J, I_{STG}	-55 to 150	-55 to 150	℃

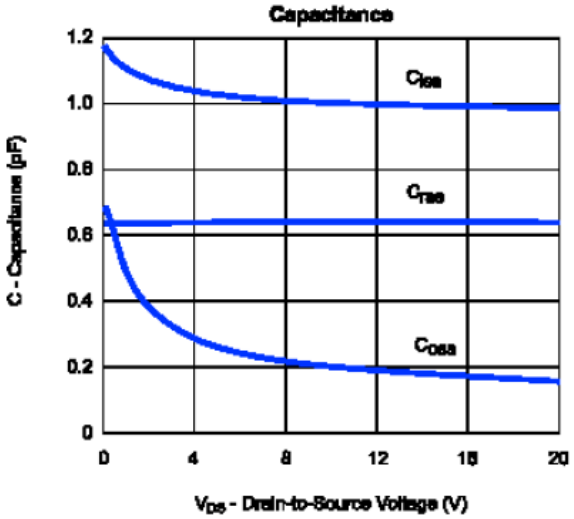
Parameter: Thermal Characteristics MOSFET		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient [A]	t ≤ 10s	$R_{\theta JA}$	86		℃/W

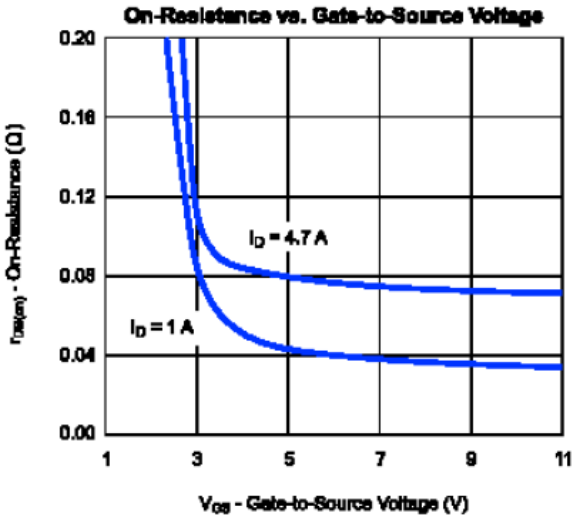
Electrical Characteristics（TJ＝25℃ unless otherwise note）						
Symbol	**Parameter**	**Conditions**	**Min**	**Typ**	**Max**	**Units**
STATIC PARAMETERS						
$\mathbf{BV_{DSS}}$	Drain-Source Breakdown Voltage	I_D= -250uA,V_{GS}=0V	-20			V
$\mathbf{I_{DSS}}$	Zero Gate Voltage Drain Current	V_{DS}= -20V,V_{GS}=0V			-1	uA
$\mathbf{I_{GSS}}$	Gate-Body leakage current	V_{DS}=0V, V_{GS}=±12V			±100	nA
$\mathbf{V_{GS(IN)}}$	Gate Threshold Voltage	V_{DS}= $V_{GS,}$ I_D= -250uA	-0.6	-0.85	-1.4	V
$\mathbf{R_{DS(ON)}}$	Static Drain-Source On-Resistance	V_{GS}=-4.5V, I_D= -4.7A		48	60	mΩ
		V_{GS}= -2.7V, I_D= -3.8A		63	90	mΩ
		V_{GS}= -2.5V, I_D= -1.0A		65	100	mΩ
$\mathbf{g_{FS}}$	Forward Transconductance	V_{GS}= -10V, I_D= -4.7A		8.0		S
DYNAMIC PARAMETERS						
C_{ISS}	Input Capacitance	V_{GS}= 0V, V_{DS}= -6V,f= 1MHz		415		pF
C_{OSS}	Output Capacitance			223		pF
C_{RSS}	Reverse Transfer Capacitance			87		pF
SWITCHING PARAMETERS						
Q_g	Total Gate Charge	V_{GS}=-4.5V,V_{DS}=-10V,I_D= -4.7A		24	36	nC
Q_{gs}	Gate Source Charge			18		nC
Q_{gd}	Gate Drain Charge			2.7		nC
$T_{D(on)}$	Turn-On DelayTime	V_{GS}= -4.5V, V_{DS}= -10V, I_D=-1A, R_{GEN}=6Ω		22	35	ns
t_r	Turn-On Rise Time			35	55	ns
$T_{D(off)}$	Turn-Off DelayTime			45	70	ns
t_f	Turn-Off Fall Time			25	40	ns
I_S	Max. Diode Forward Current				-1.7	A
V_{SD}	Diode Forward Voltage	V_{GS} = 0V,I_S=-1.7A			-1.2	V

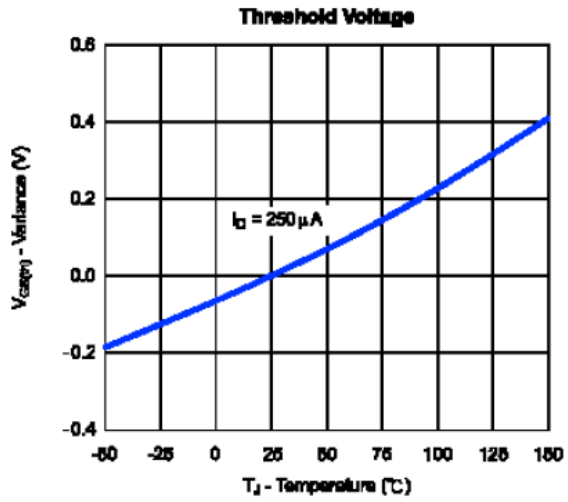
TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS



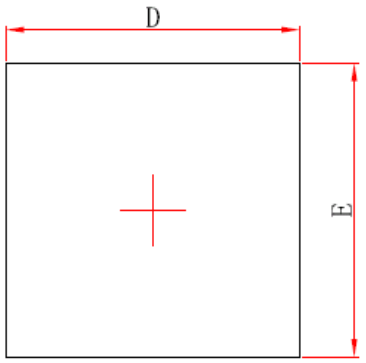




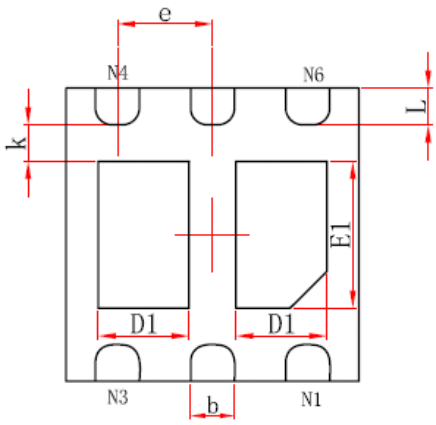




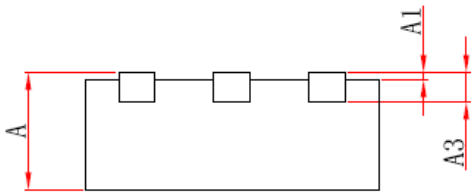
DFNWB2×2-6L-A(P0.65T0.75/0.85) PACKAGE OUTLINE DIMENSIONS



Top View



Bottom View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700/0.800	0.800/0.900	0.028/0.031	0.031/0.035
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.924	2.076	0.076	0.082
E	1.924	2.076	0.076	0.082
D1	0.520	0.720	0.020	0.028
E1	0.900	1.100	0.035	0.043
k	0.200MIN.		0.008MIN.	
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
L	0.174	0.326	0.007	0.013

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