/ Descriptions

Dual N-Channel MOSFET in a SOT23-6 Plastic Package.

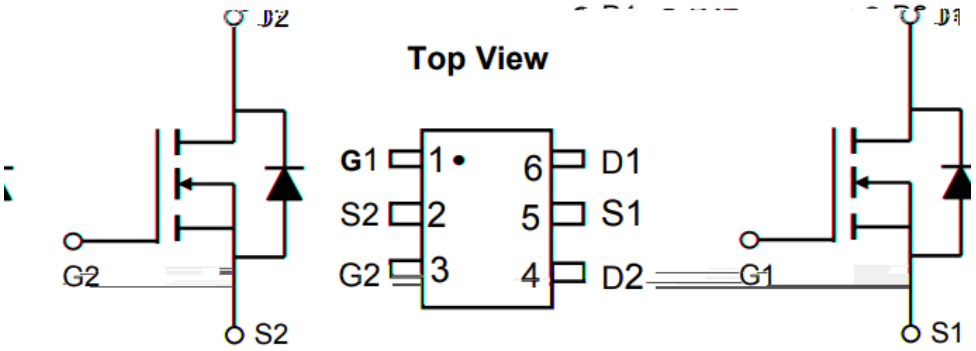
/ Features

Super high dense cell design for low $R_{DS(ON)}$,Rugged and reliable, HF product.

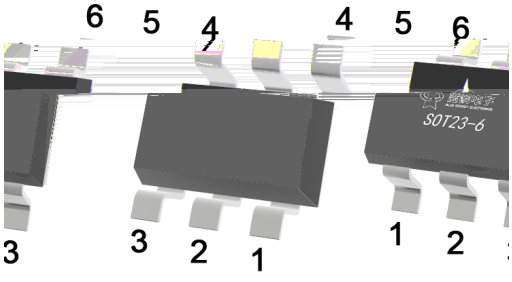
/ Applications

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

/ Equivalent Circuit



/ Pinning



PIN1 G1 PIN 2 S2 PIN 3 G2

PIN 4 D2 PIN 5 S1 PIN 6 D1

/ Marking

Marking	H310

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current – Continuous		I_D	3.0	A
Pulsed Drain Current		I_{DM}	15	A
Power Dissipation		P_D	0.9	W
Storage Temperature Range		T_{stg}	-55 150	
Maximum Junction-to-Ambient	t ≤ 10s	$R_{\theta JA}$	60	/W
Maximum Junction-to-Ambient	Steady-State		96	
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	40	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0	I_D=10μA	60	68		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0	V_{DS}=60V			1.0	μA
Gate–Body Leakage.	I_{GSS}	V_{GS}=±20V	V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=50μA	1.0	1.8	3.0	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	V_{GS}=10V	I_D=3A		84	90	mΩ
	$R_{DS(on)2}$	V_{GS}=4.5V	I_D=3A		94	110	mΩ
Drain–Source Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_D=1A		0.75	1.2	V

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	Ciss	VGS=0V, VDS=25V f=1MHz		415		pF
Output Capacitance	Coss			37		
Reverse Transfer Capacitance	Crss			25		
Gate resistance	Rg	VGS=0V, VDS=0V f=1MHz		3.4		Ω
Total Gate Charge	Qg(10V)	VGS=10V, VDS=30V ID=4.2A		10	12	nC
Total Gate Charge	Qg(4.5V)			5	6	
Gate Source Charge	Qgs			2		
Gate Drain Charge	Qgd			3		
Turn–On Delay Time	$t_{d(on)}$	VGS=10V, VDS=30V RL=7Ω, RGEN=3Ω			7	ns
Turn–On Rise Time	t_r				4	
Turn–Off Delay Time	$t_{d(off)}$				20	
Turn–Off Fall Time	t_f				3	

/ Electrical Characteristic Curve

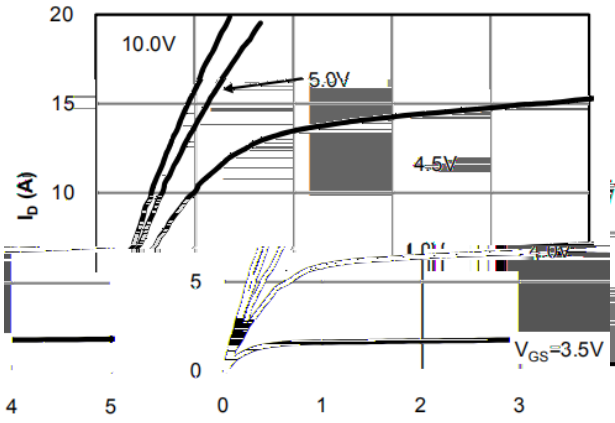


Fig 1: On-Region Characteristics

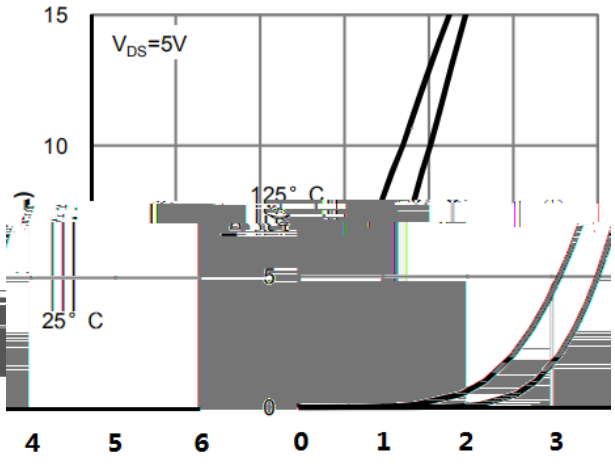


Figure 2: Transfer Characteristics

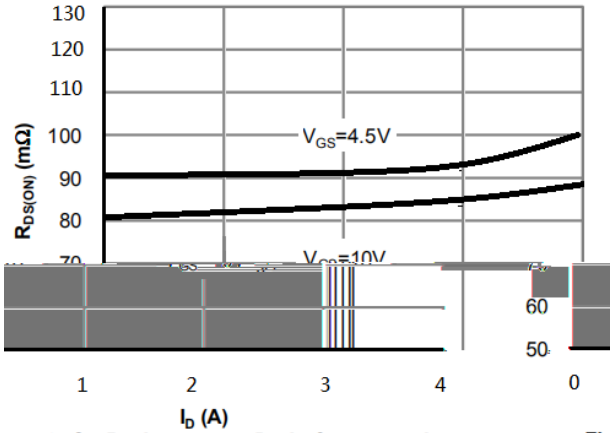


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

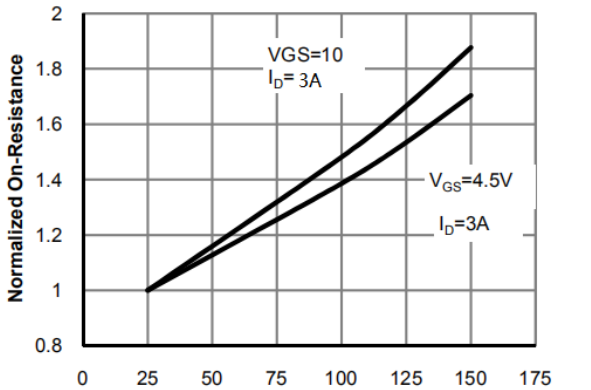


Figure 4: On-Resistance vs. Junction Temperature

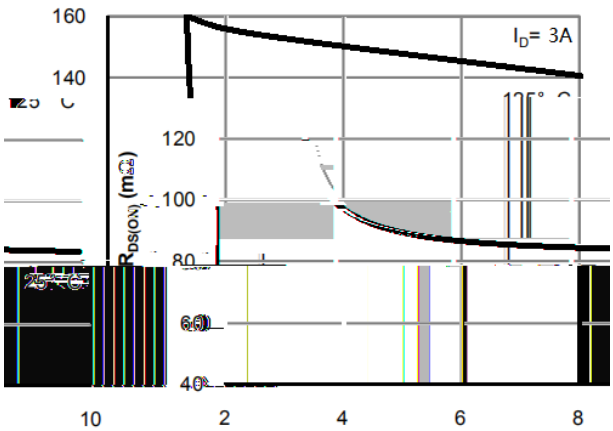


Figure 5: On-Resistance vs. Gate-Source Voltage

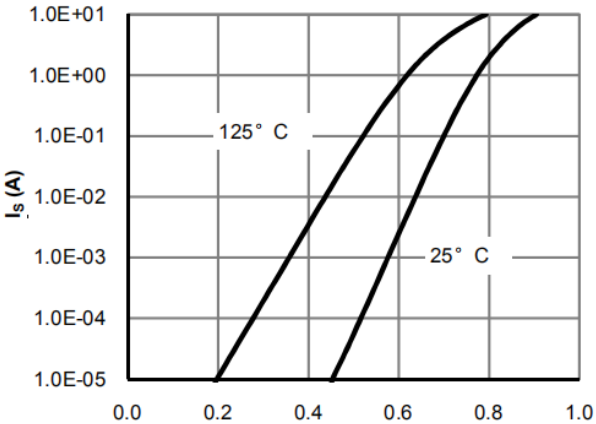


Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

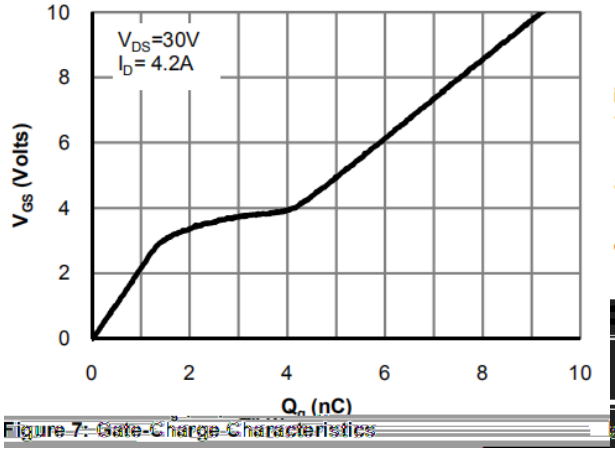
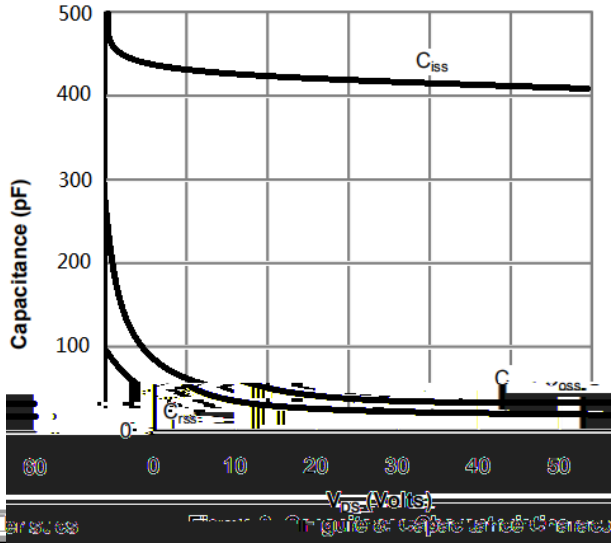


Figure 7: Gate-Charge Characteristics



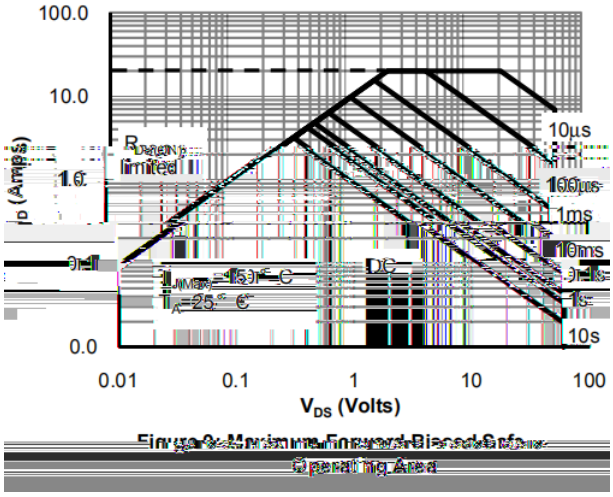


Figure 8: Maximum Forward Biased Safe Operating Area

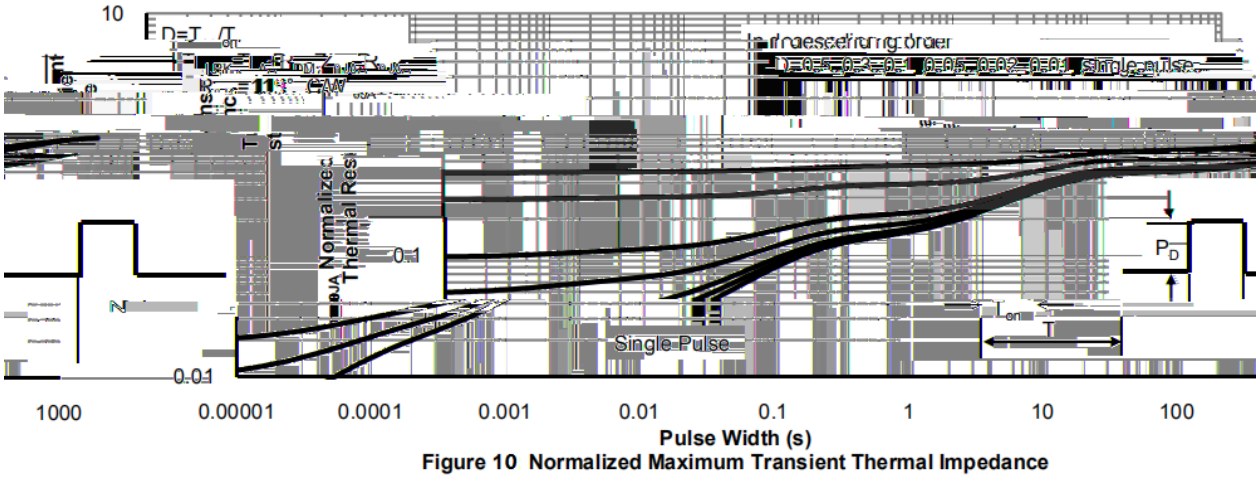
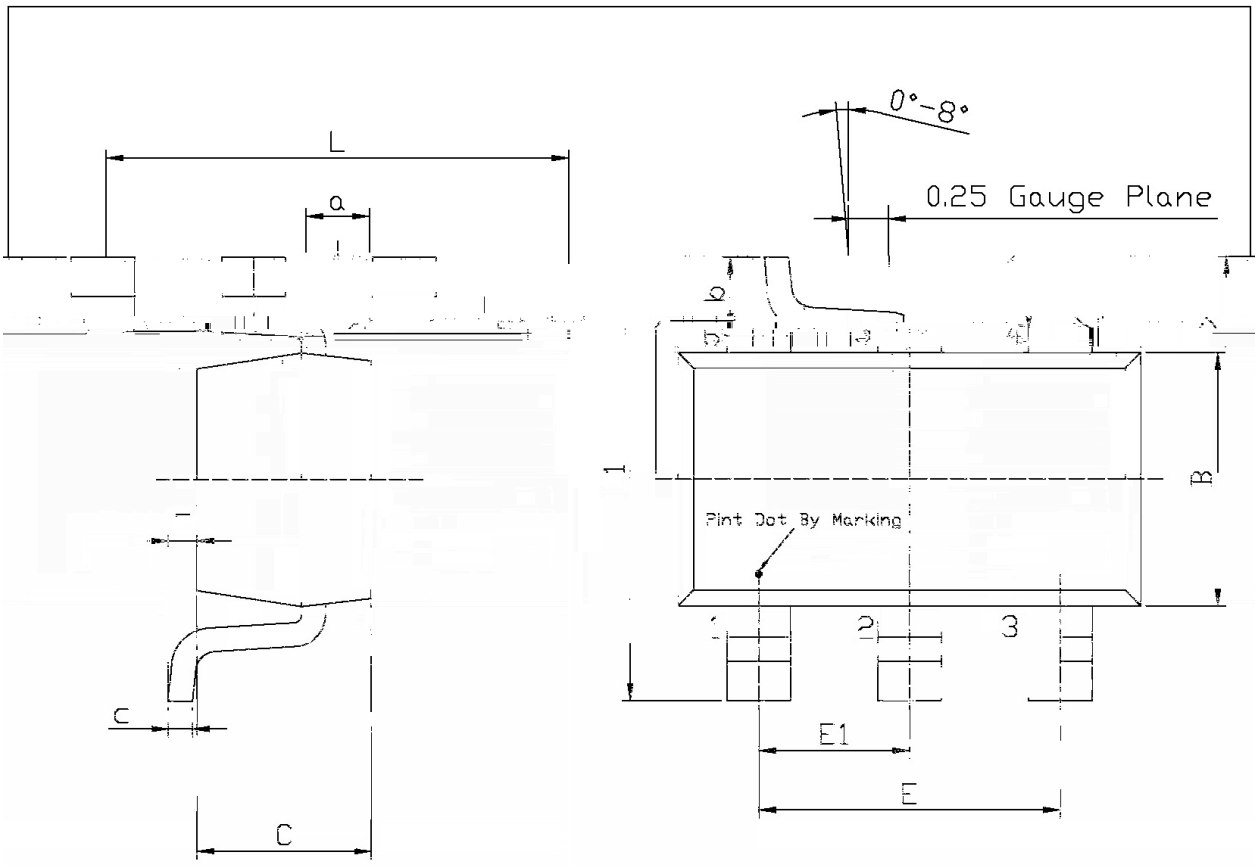


Figure 10 Normalized Maximum Transient Thermal Impedance

/ Package Dimensions



Unit: mm

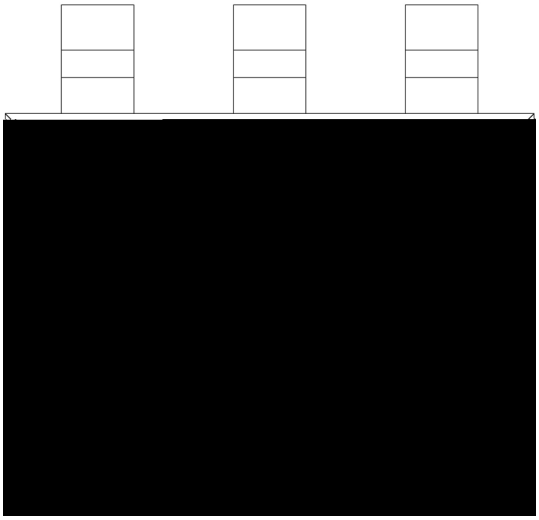
Symbol	Dimensions In Millimeters	
	Min	Max
	0.85	1.05
	0.35	0.50
	0.10	0.20
	0.35	0.55
	0	0.15

Symbol	Dimensions In Millimeters		Symbol
	Min	Max	
L	2.82	3.02	E1
B	1.50	1.70	a
C	0.90	1.30	c
L1	2.60	3.00	b
E	1.80	2.00	F

6

SOT23-

/ Marking Instructions



310

****

Note:

H	Company Code
310	Product Type Code
****	Lot No. Code, code change with Lot No

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)

		Note:
1	150 180 60 90sec;	1.Preheating:150~180 , Time:60~90sec.
2	245 5 5 0.5sec;	2.Peak Temp.:245 5 , Duration:5 0.5sec.
3	2 10 /sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260 5	10 1 sec.	Temp.:260±5	Time:10±1 sec

/ Packaging SPEC.

/ REEL