/ Descriptions

SOT-23 N MOS

N- CHANNEL MOSFET in a SOT-23 Plastic Package.

/ Features

$R_{DS(ON)}$ SOT-23

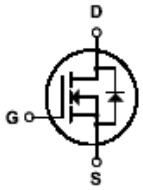
Super high dense cell design for low $R_{DS(ON)}$,SOT-23 package,HF Product.

/ Applications

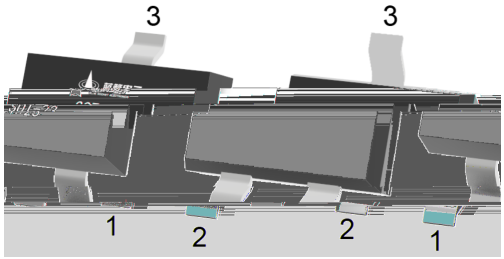
DC-DC

Battery management,High speed switch,low power DC to DC converter.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 S PIN 3 D

/ 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_{JA}	55	℃/W
Maximum Junction-to-Ambient	Steady-State		139	

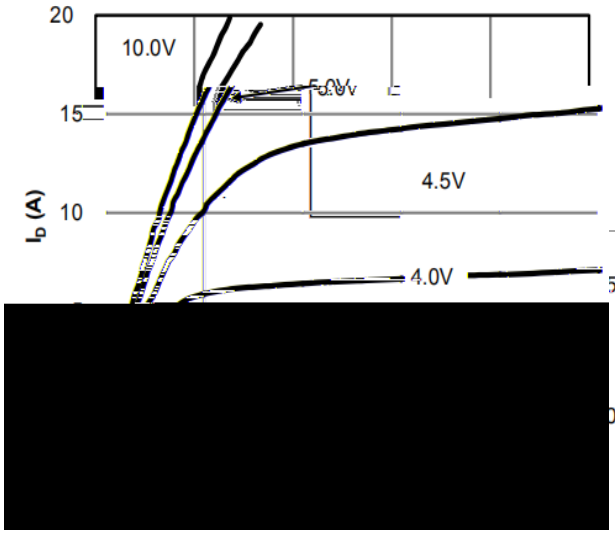
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0	I_D=250μA	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
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
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	1.0	1.8	3.0	V
Maximum Body-Diode Continuous Current	I_S					3	A
Input Capacitance	C_{iss}	VGS=0V, f=1MHz	VDS=25V		415		pF
Output Capacitance	C_{oss}				37		
Reverse Transfer Capacitance	C_{rss}				25		
Gate resistance	Rg	VGS=0V, f=1MHz	VDS=0V		3.4		
Total Gate Charge	$Q_{g(10V)}$	VGS=10V, ID=4.2A	VDS=30V		10		nC
Total Gate Charge	$Q_{g(4.5V)}$				5		
Gate Source Charge	Q_{gs}				2		
Gate Drain Charge	Q_{gd}				3		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn–On Delay Time	td(on)	VGS=10V, VDS=30V RL=7Ω, RGEN=3Ω		7		ns
Turn–On Rise Time	tr			12		
Turn–Off Delay Time	td(off)			16		
Turn–Off Fall Time	tf			11		

/ Electrical Characteristic Curve



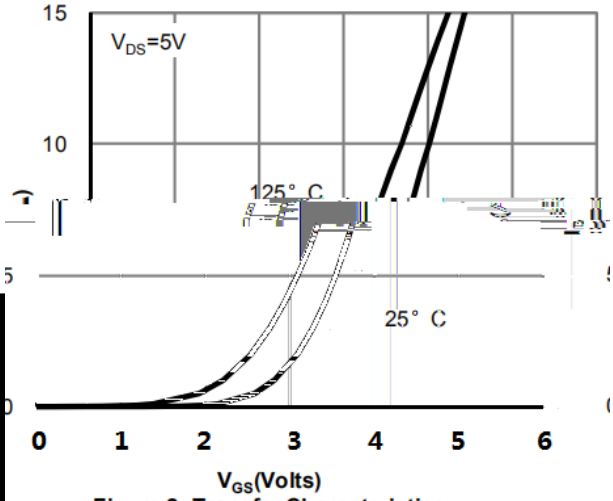


Figure 2: Transfer Characteristics

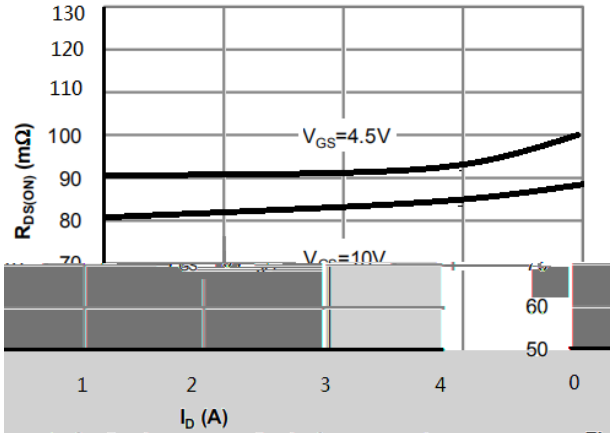


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

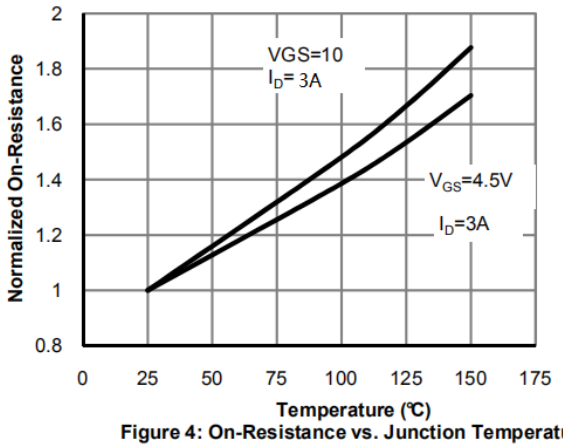


Figure 4: On-Resistance vs. Junction Temperature

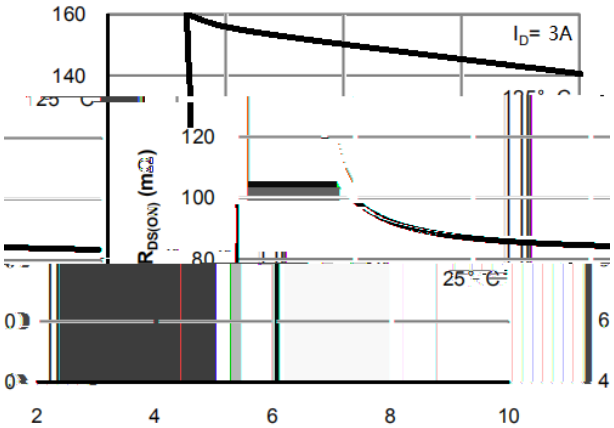


Figure 5: On-Resistance vs. Gate-Source Voltage

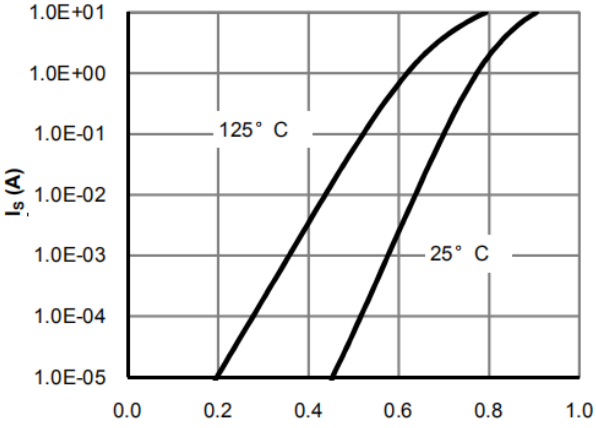
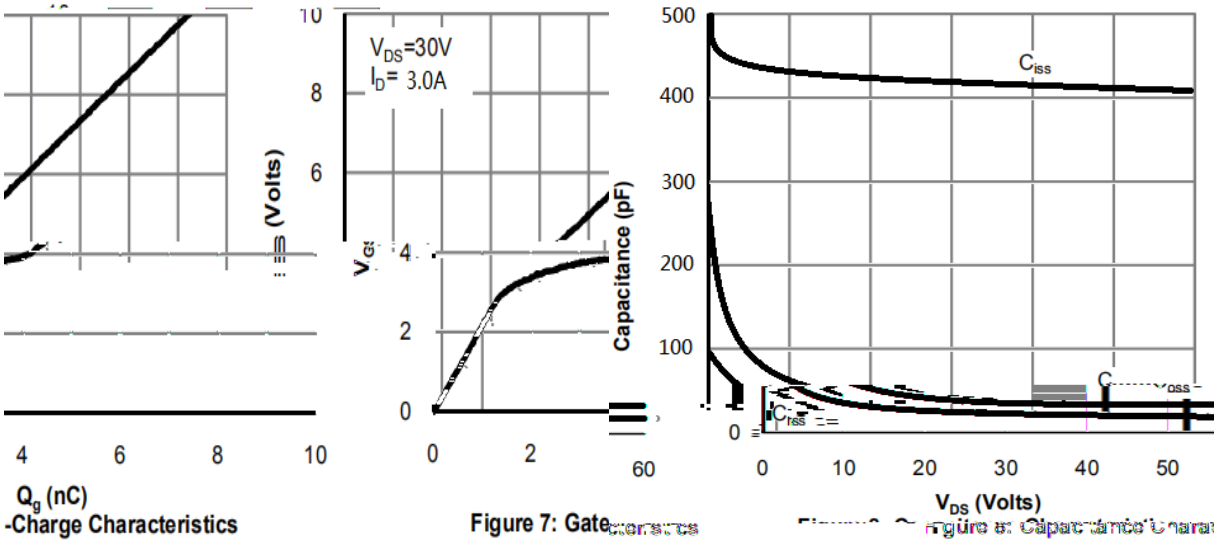


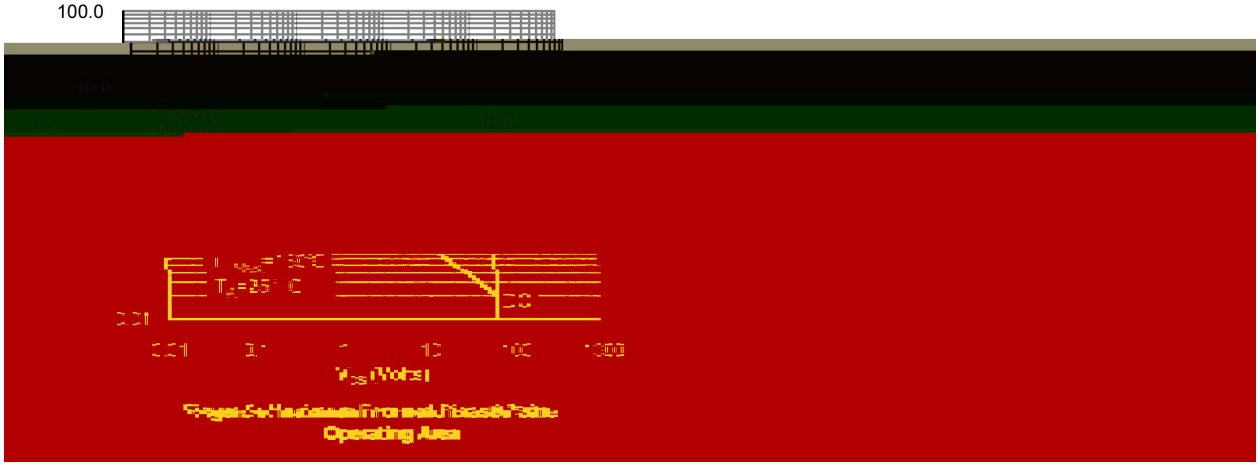
Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve



-Charge Characteristics

Figure 7: Gate



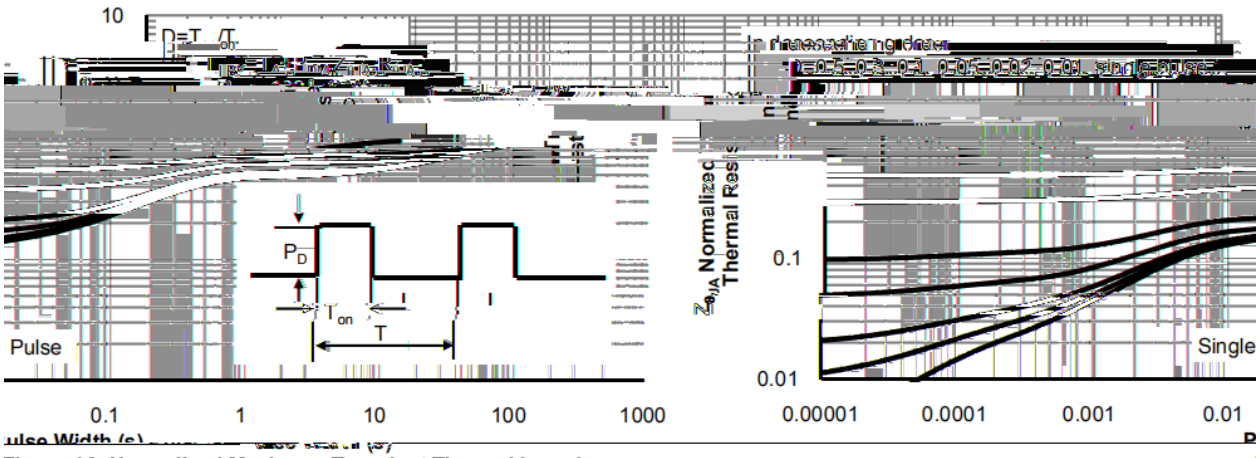
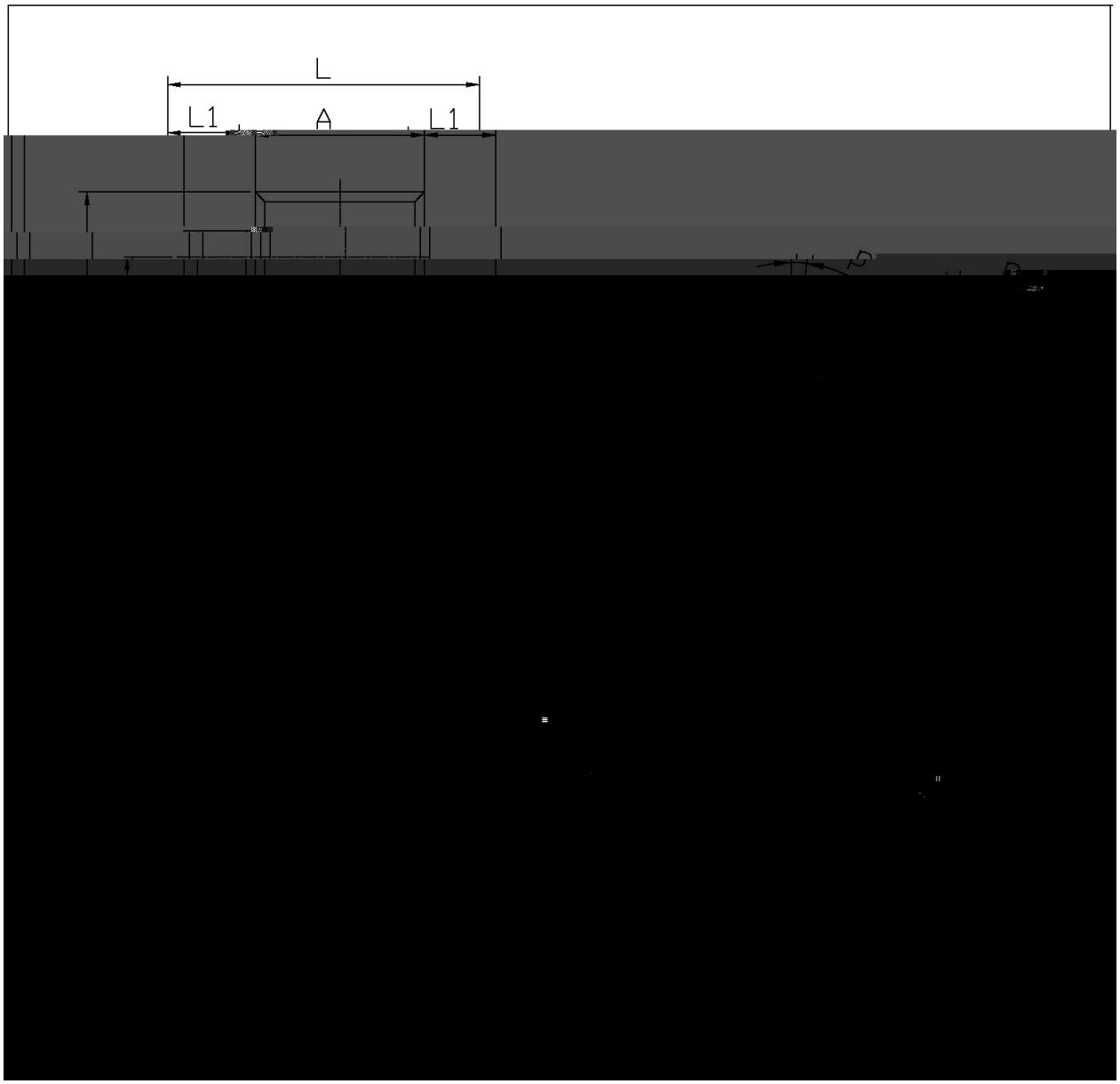


Figure 10 Normalized Maximum Transient Thermal Impedance

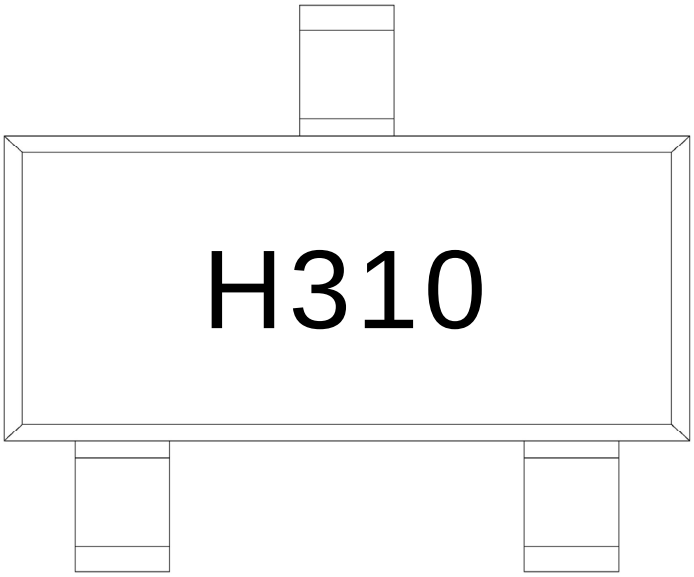
/ Package Dimensions

SOT-23

单位：mm



/ Marking Instructions



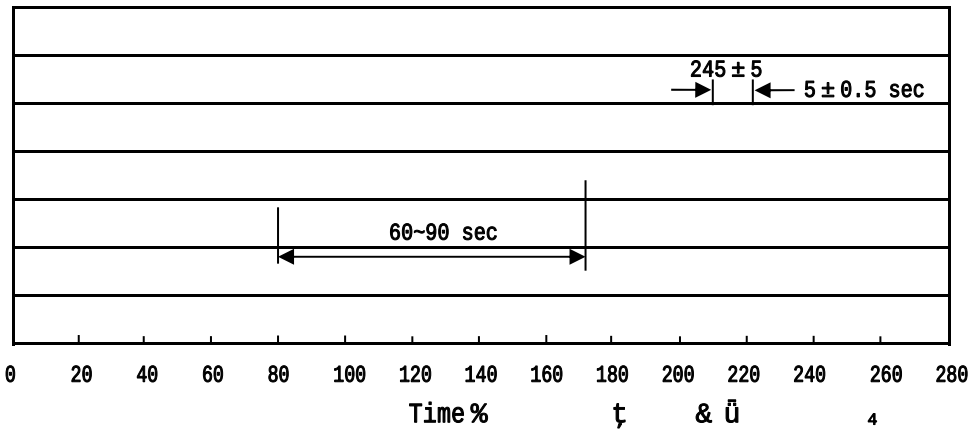
H:

310:

Note:

H:	Company Code
310	Product Type Code

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



1	150 180	60 90sec;	Note: 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

Package Type	Units					Dimension		(unit mm³)
SOT-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices