

/ Descriptions

SOT23-6 P MOS

P- CHANNEL MOSFET in a SOT23-6 Plastic Package.

/ Features

$V_{DS} (V) = -12V$ $I_D = -8.0A$

$R_{DS(ON)}@-10V$ 20m (Type.18m)

$R_{DS(ON)}@-4.5V$ 25m (Type.21m)

$R_{DS(ON)}@-2.5V$ 30m (Type.27m)

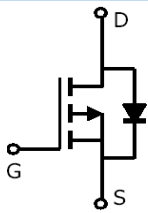
$R_{DS(ON)}@-1.8V$ 50m (Type.40m)

。 HF Product.

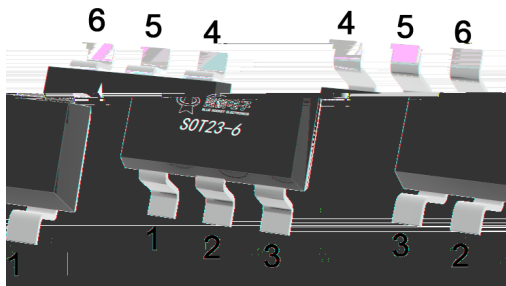
/ Applications

PWM applications, Load switch, Power management.

/ Equivalent Circuit



/ Pinning



PIN1 2 5 6 D

PIN 3 G

PIN 4 S

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-12	V
Gate-Source Voltage	V_{GSS}	± 8	V
Continuous Drain Current	$I_D(T_C=25^\circ\text{C})$	-8.0	A
Pulsed Drain Current	I_{DM}	-25	A
Power Dissipation for Single Operation	$P_D(T_C=25^\circ\text{C})$	1.8	W
Maximum Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	
Thermal Resistance-Junction to Ambient	R_{JA}	125	/W
Thermal Resistance-Junction to Case	R_{JC}	69	/W

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\text{ A}$ $V_{GS}=0\text{V}$	-12	-17.5		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-12\text{V}$ $V_{GS}=0\text{V}$			-1.0	A
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$ $V_{GS}=\pm 8\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\text{ A}$	-0.5	-0.6	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$ $I_D=-3.0\text{A}$		18	20	mΩ
		$V_{GS}=-4.5\text{V}$ $I_D=-3.0\text{A}$		21	25	
		$V_{GS}=-2.5\text{V}$ $I_D=-2.0\text{A}$		27	30	
		$V_{GS}=-1.8\text{V}$ $I_D=-1.0\text{A}$		40	50	
Diode Forward Voltage	V_{SD}	$I_S=-1\text{A}$ $V_{GS}=0\text{V}$			-1.2	V
Gate resistance	R_g	$V_{GS}=0\text{V}$, $V_{DS}=0\text{V}$, $f=1\text{MHz}$		14		Ω
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$ $V_{DS}=-6\text{V}$ $f=1\text{MHz}$		1700		pF
Output Capacitance	C_{oss}			580		
Reverse Transfer Capacitance	C_{rss}			250		

BRCS200P012MF

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Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	$V_{GS}=-4.5V$ $V_{DS}=-6V$ $I_D=-8A$				

/ Electrical Characteristic Curve

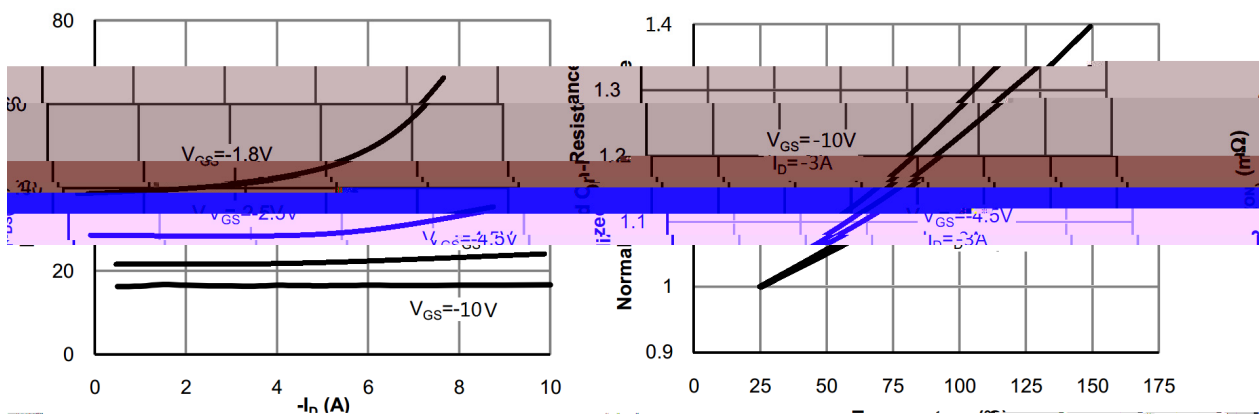
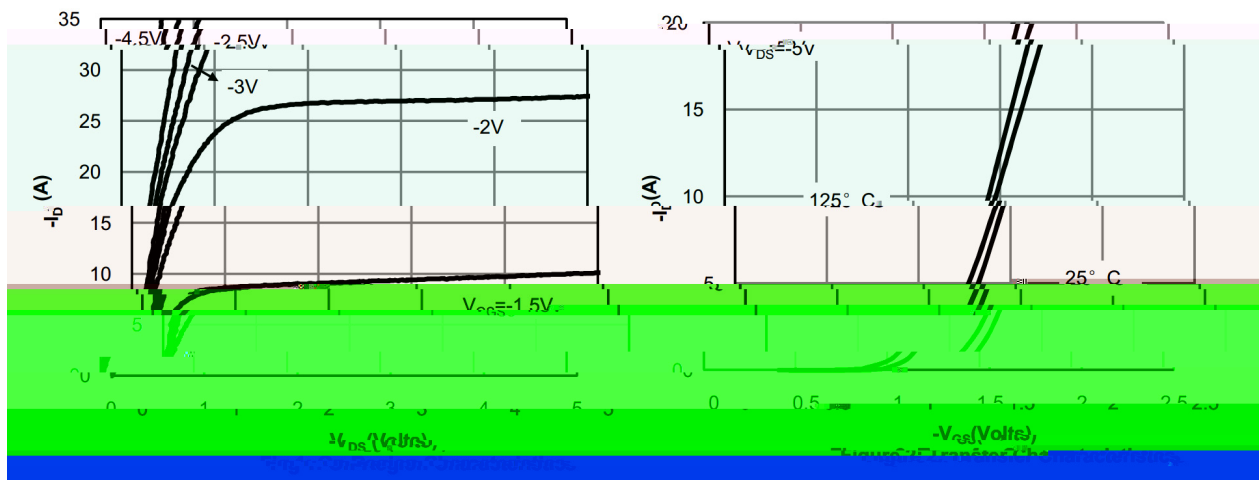


Figure 3: On-Resistance vs. Drain Current and Gate Voltage
 Figure 4: On-Resistance vs. Junction Temperature

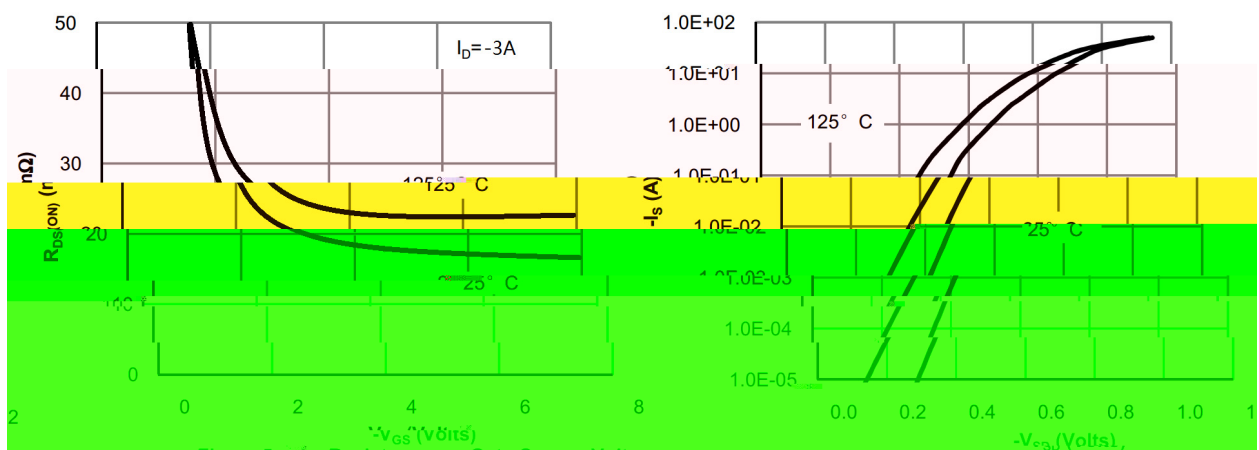


Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

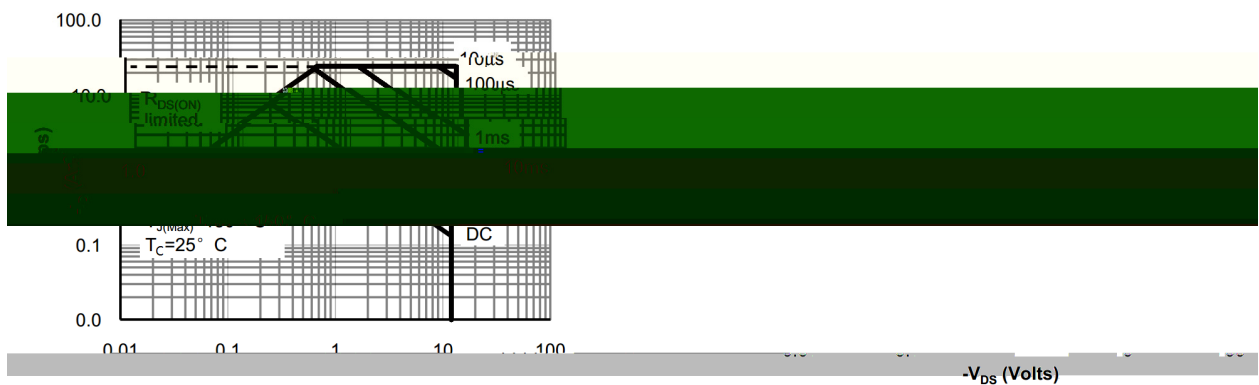
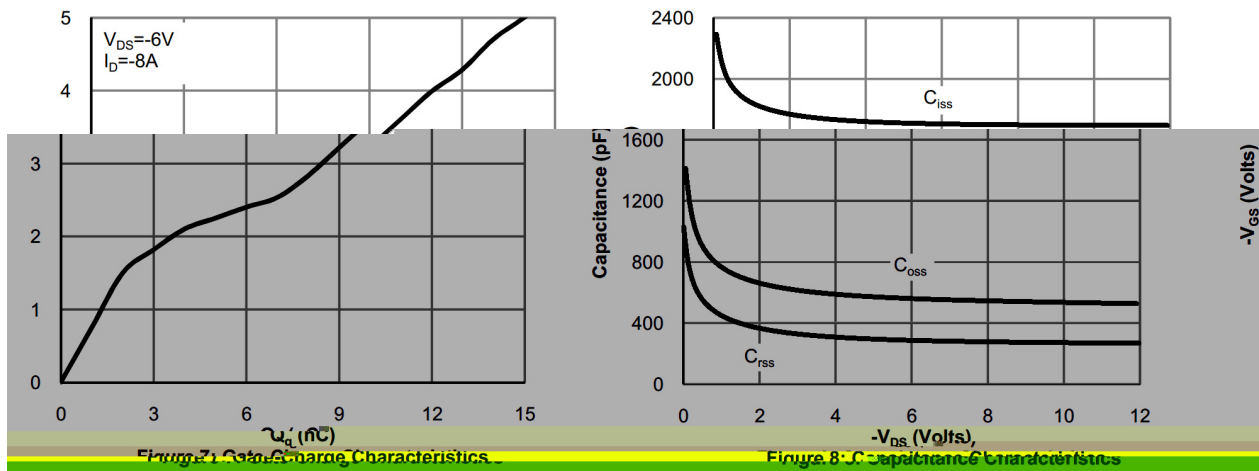


Figure 9: Maximum Forward Biased Safe Operating Area

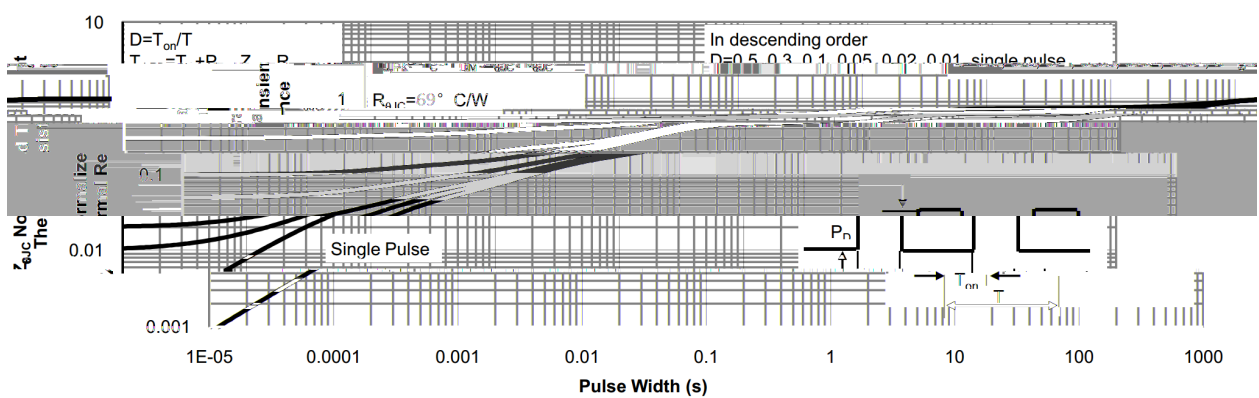
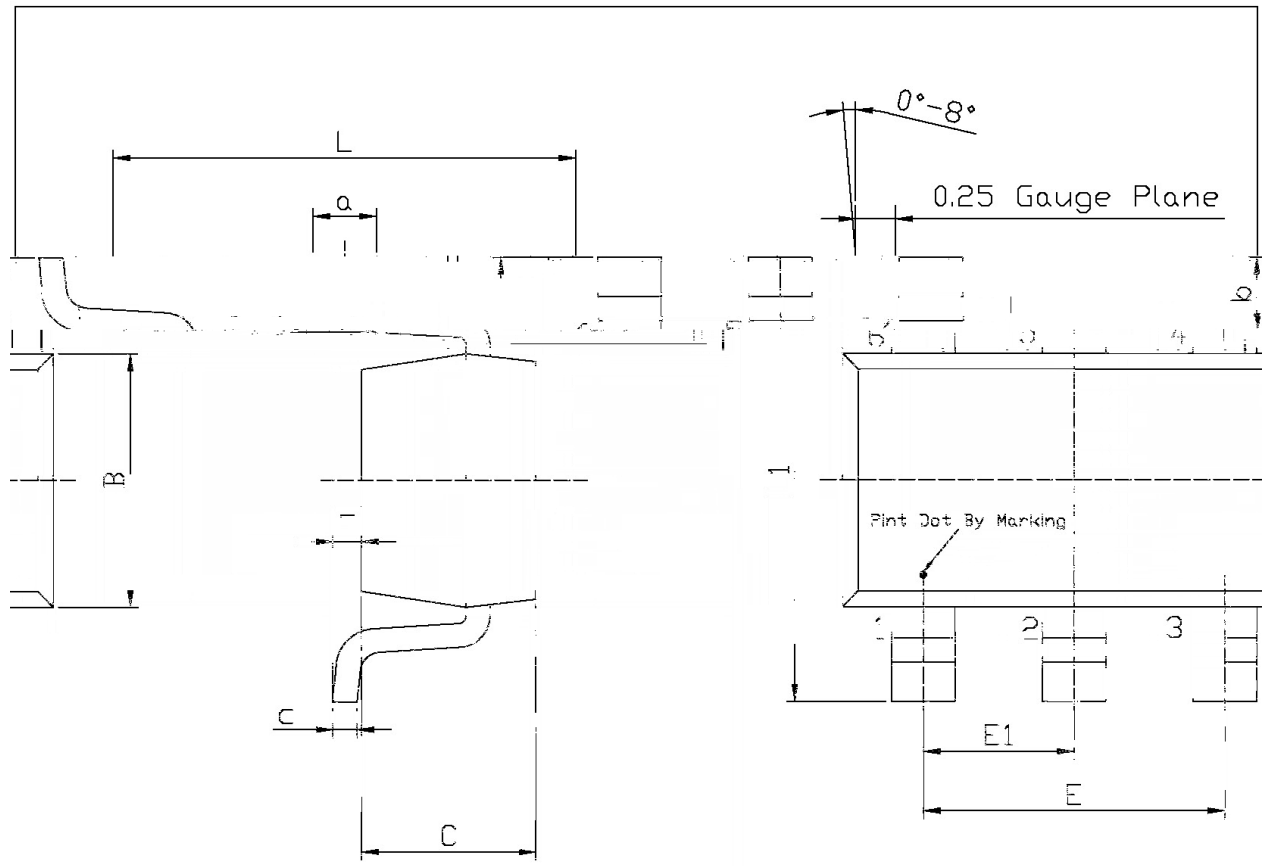


Figure 10: Normalized Maximum Transient Thermal Impedance

I Package Dimensions



Unit: mm

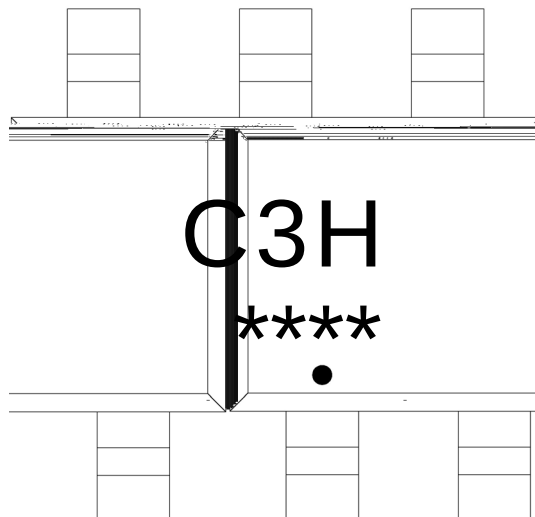
Parameters	Symbol	Dimensions In Millimeters	
		Min	Max
Max	E1	0.85	1.05
3.32	a	0.35	0.50
1.70	c	0.10	0.20
1.30	b	0.35	0.55
3.00	F	0	0.15
2.00			

Symbol	Dimensions In Millimeters	
	Min	Max
L	2.82	3.00
B	1.50	1.70
C	0.90	1.00
L1	2.60	2.80
E	1.80	2.00

T23-6

S□

/ Marking Instructions



C3

H

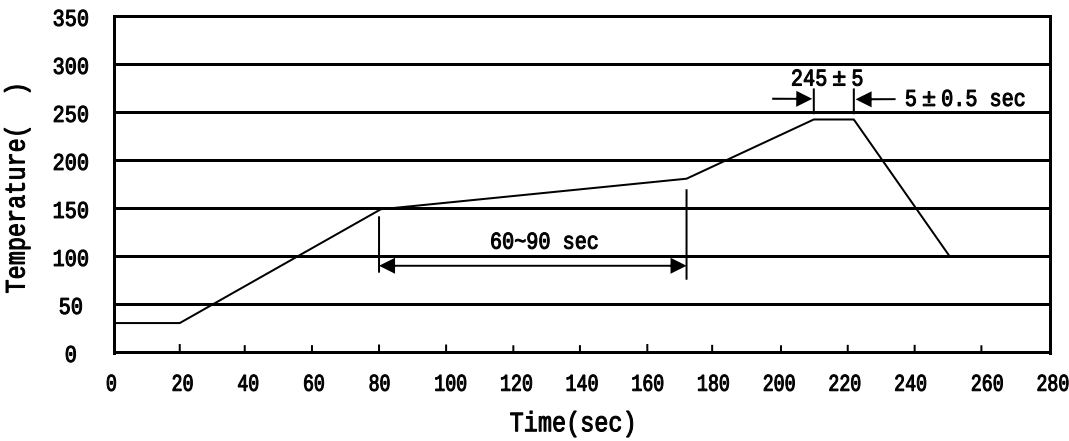
Note:

C3: Product Type Code

H: Company 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 °C , Time:60~90sec. |
| 2 | 245±5 | | | 5±0.5sec; | 2.Peak Temp.:245±5 °C , Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 °C/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 mm ³)		
SOT23-5/6	3,000	10	30,000	4	120,000	7" ×8	210×205×205	445×435×230

/ Notices