

/ Descriptions

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

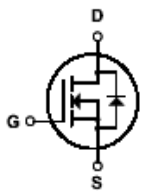
/ Features

Low $R_{DS(ON)}$, SOT-23 package, HF Product.

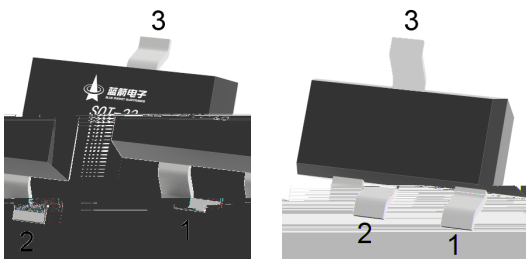
/ Applications

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

/ Equivalent Circuit



/ Pinning



PIN1 G

PIN 2 S

PIN 3 D

/ Marking

Marking	A8H
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/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DSS}	20	V
Gate-Source Voltage		V _{GSS}	±10	V
Drain Current – Continuous		I _D	4.5	A
Pulsed Drain Current		I _{DM}	12	A
Power Dissipation		P _D	1.4	W
Storage Temperature Range		T _{stg}	-55~150	
Maximum Junction-to-Ambient	t ≤ 10s	R _{θJA}	90	°C/W
Maximum Junction-to-Ambient	Steady-State		125	
Maximum Junction-to-Lead	Steady-State	R _{θJL}	80	

/ 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	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} =0 V _{DS} =20V			1.0	μA
Gate–Body Leakage.	I _{GSS}	V _{GS} =±10V V _{DS} =0V			±100	nA
Static Drain–Source On–Resistance	R _{DS(on)1}	V _{GS} =4.5V I _D =4.5A		21	25	mΩ
	R _{DS(on)2}	V _{GS} =2.5V I _D =4.0A		26	38	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V I _D =4.5A		6		S
Drain–Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _D =1A		0.74	1.2	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =50μA	0.5	0.6	1.0	V
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =10V, f=1MHz		500		pF
Output Capacitance	C _{oss}			255		
Reverse Transfer Capacitance	C _{rss}			210		
Gate resistance	R _g	V _{GS} =V _{DS} =0V, f=1MHz		1.7		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_g(10V)$	$V_{DS}=10V$ $V_{GS}=10V$ $I_D=4.5A$		12.5		nC
Total Gate Charge	$Q_g(4.5V)$			6		
Gate Source Charge	Q_{gs}			1		
Gate Drain Charge	Q_{gd}			2		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=10V$ $V_{GS}=10V$ $R_{GEN}=3\Omega$ $R_L=1.7\Omega$		3		ns
Turn-On Rise Time	t_r			7.5		
Turn-Off Delay Time	$t_{d(off)}$			20		
Turn-Off Fall Time	t_f			6		

/ Electrical Characteristic Curve

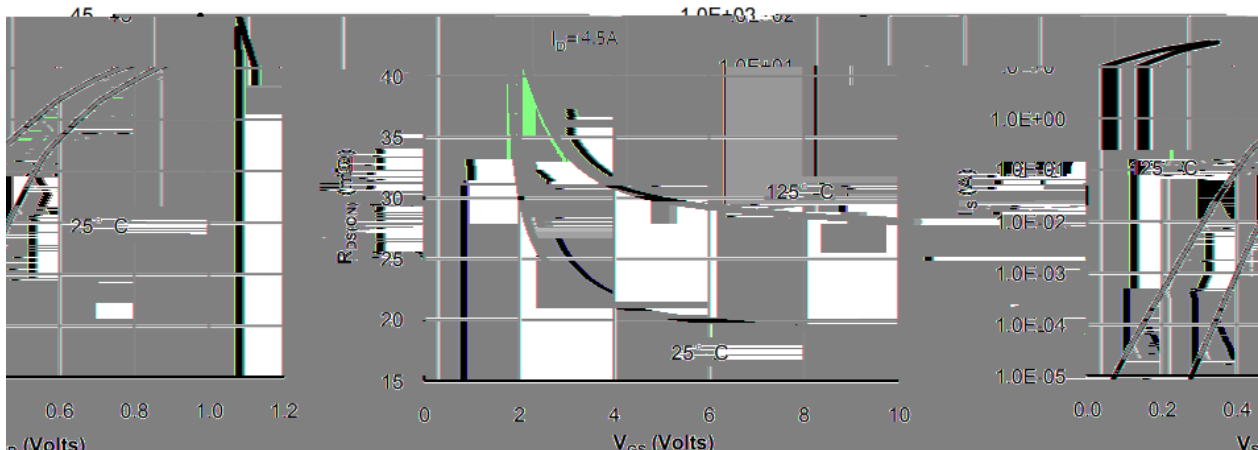
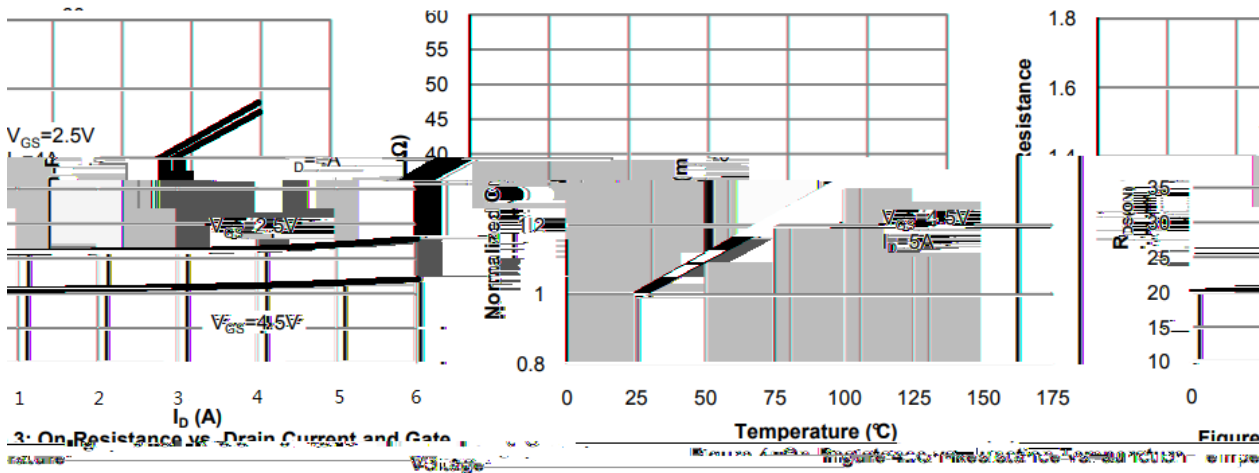
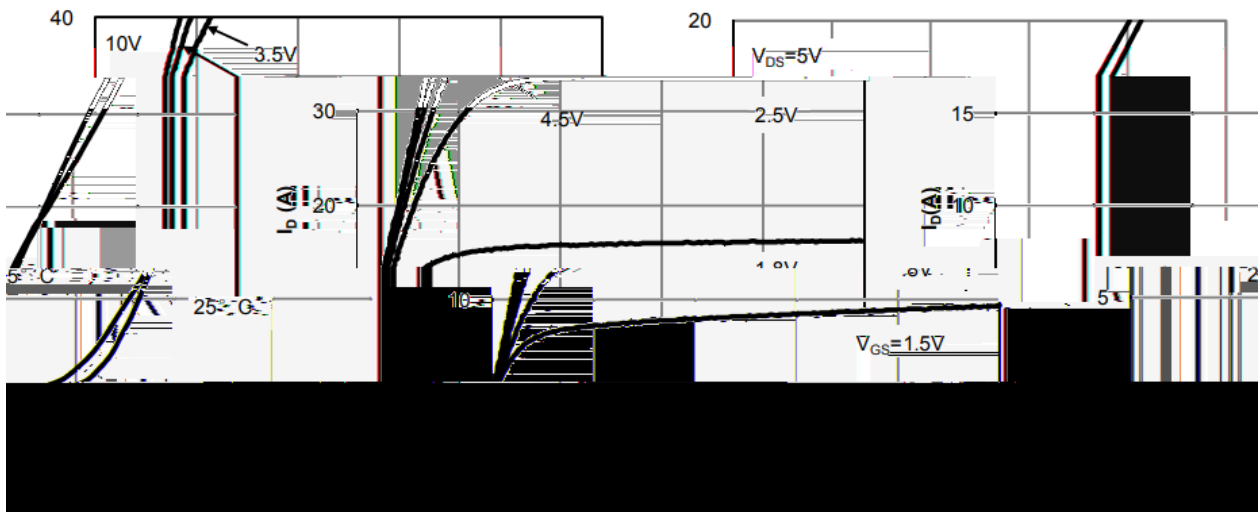


Figure 4: Transfer Characteristics

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

Figure 6: On-Resistance vs. Drain Current

/ Electrical Characteristic Curve

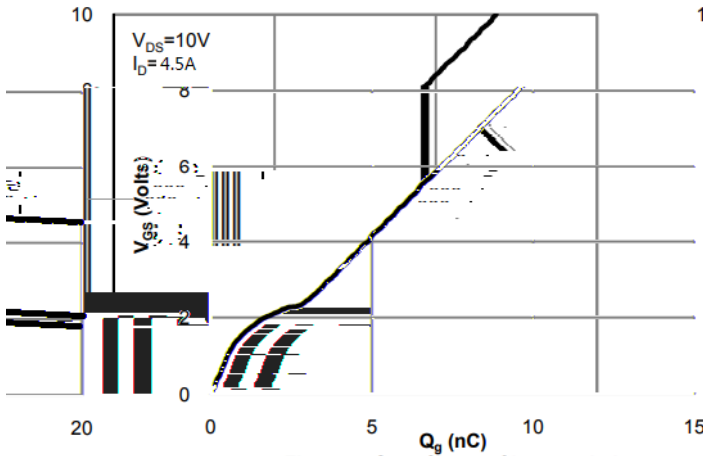


Figure 7: Gate-Charge Characteristics

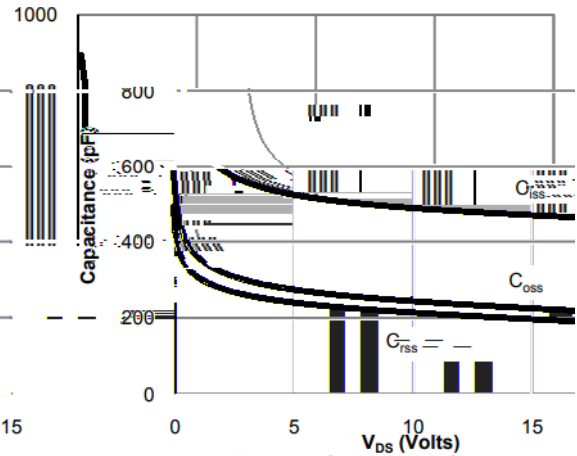


Figure 8: Capacitance Characteristic

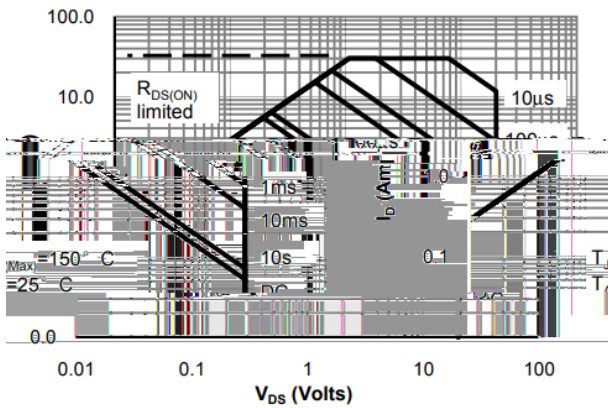


Figure 9: Maximum Forward Biased Safe Operating Area

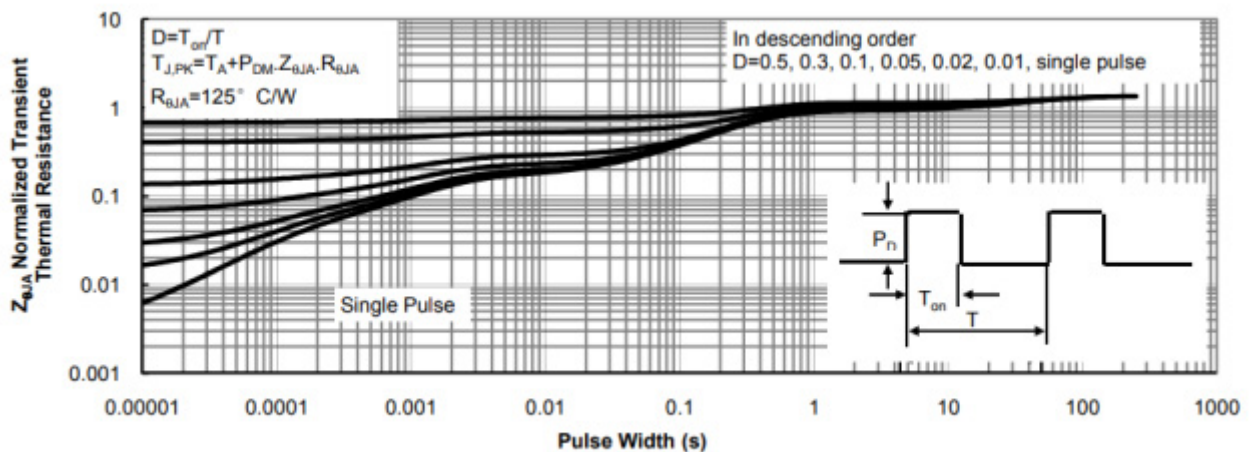
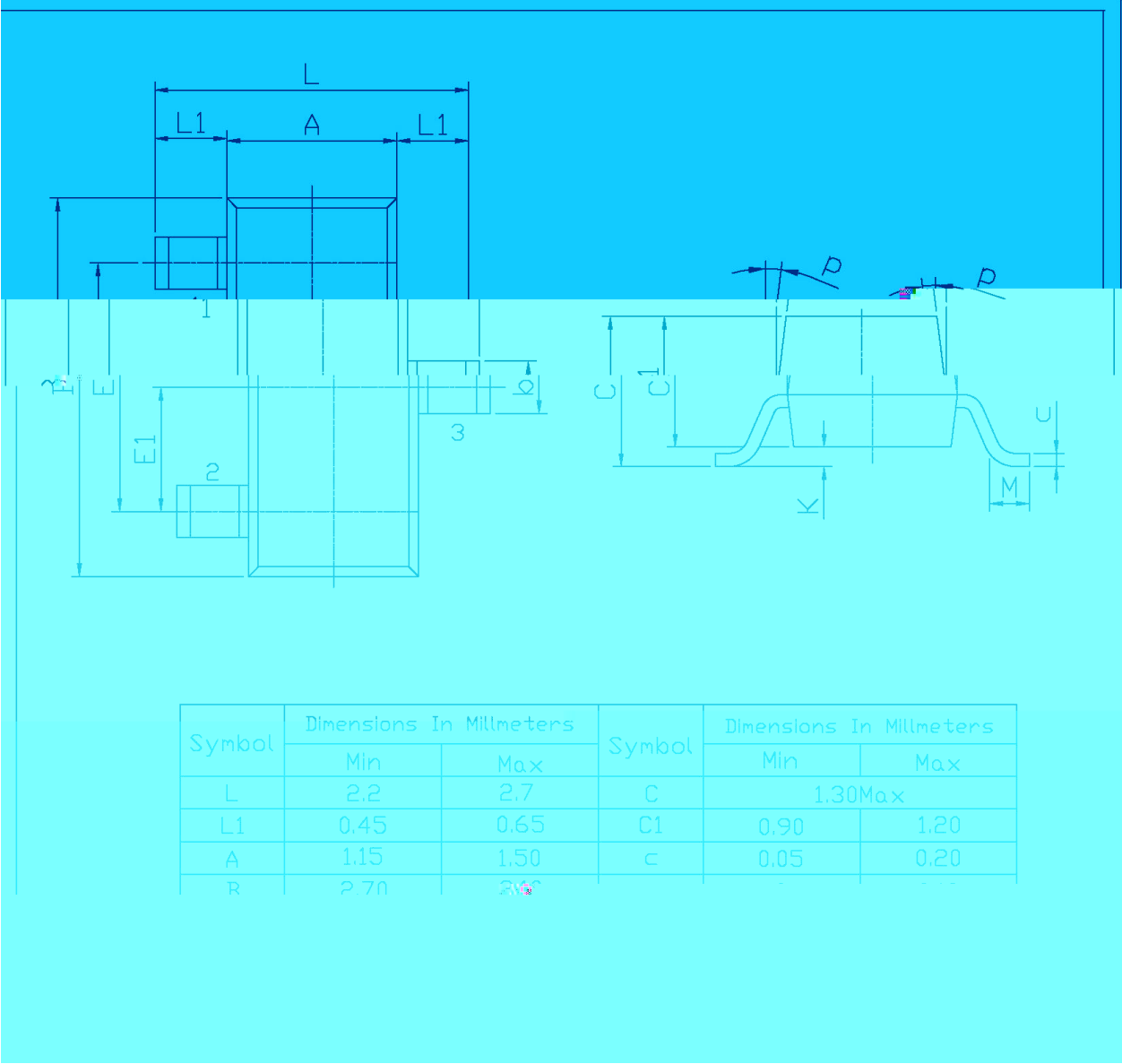


Figure 10: Normalized Maximum Transient Thermal Impedance

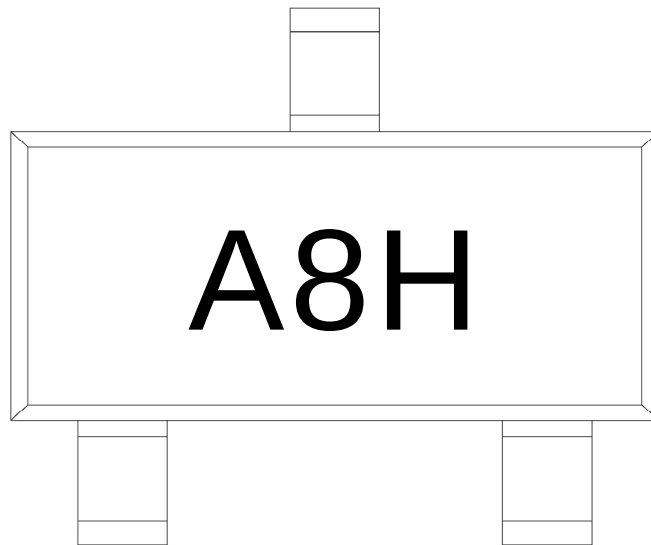
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



A8:

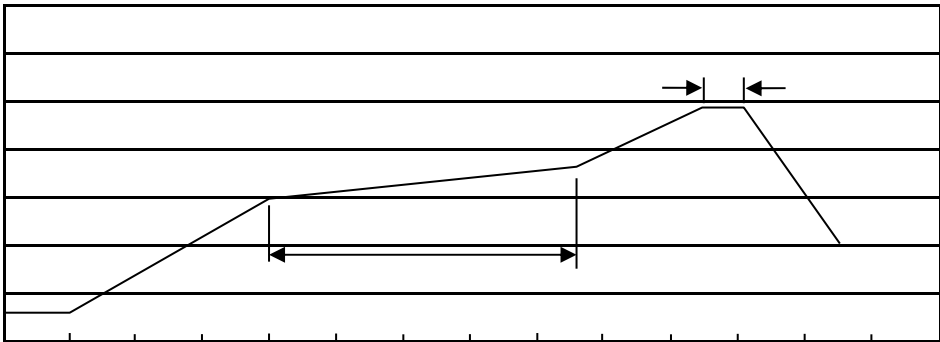
H:

Note:

A8 Product Type Code

H: Company Code

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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

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

/ Notices