

/ Descriptions

SOT-23 P MOS

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

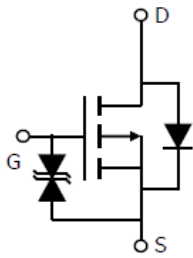
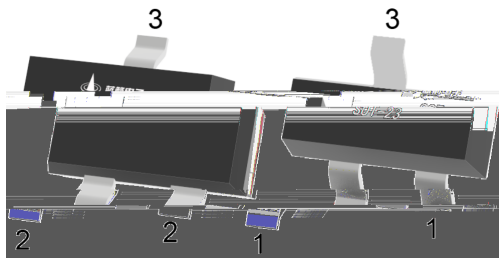
/ Features $V_{DS}=-20V$ $I_D=-5.3A$ $R_{DS(on)}@-4.5V \leq 33.2m\Omega$, (Typ. 25.5m Ω) $R_{DS(on)}@-2.5V \leq 46.8m\Omega$, (Typ. 35.2m Ω)

ESD Protected

HF Product.

/ Applications

Load switch Battery protection.

/ Equivalent Circuit**/ Pinning**

PIN1 G

PIN 2 S

PIN 3 D

/ Marking

Marking

AFH

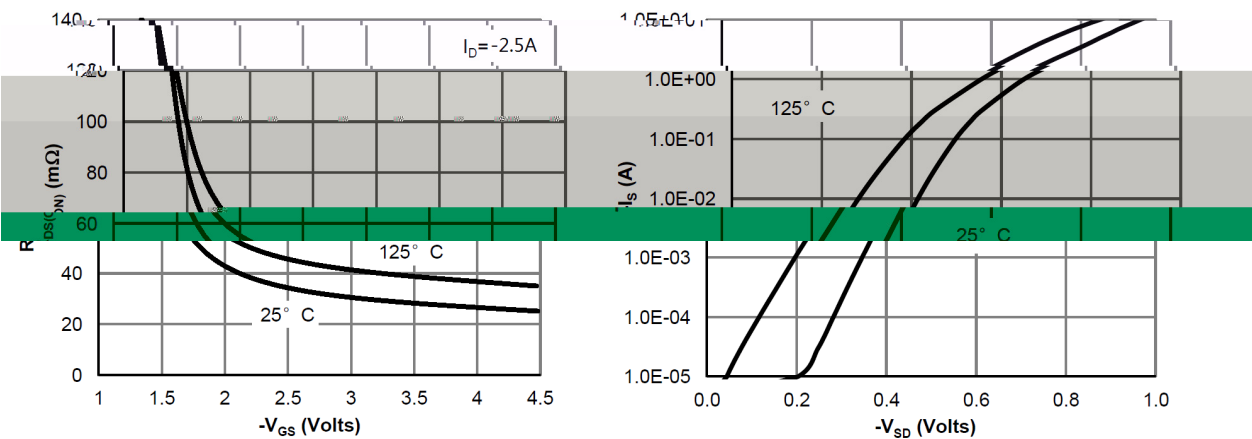
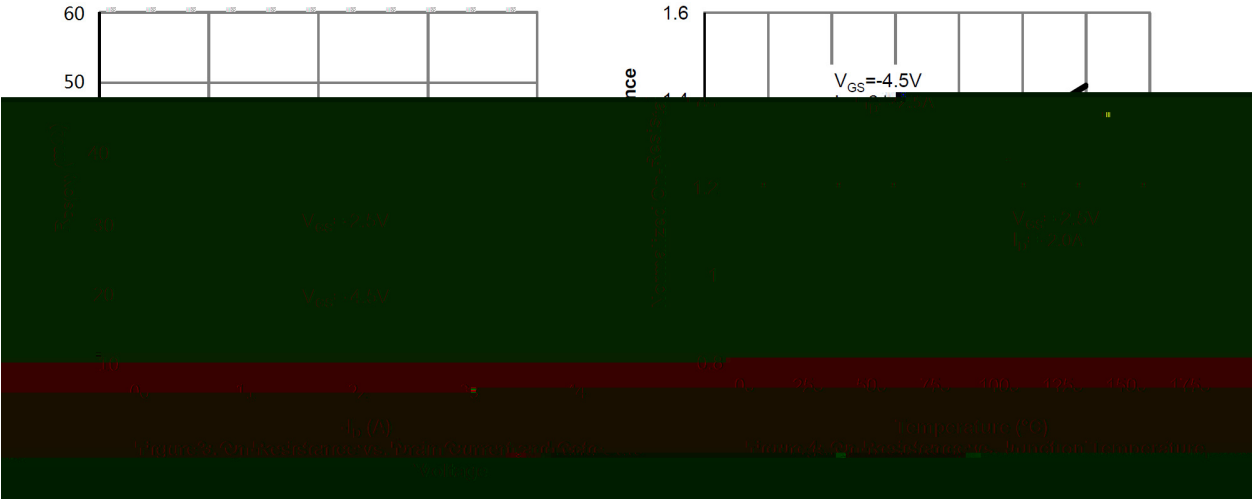
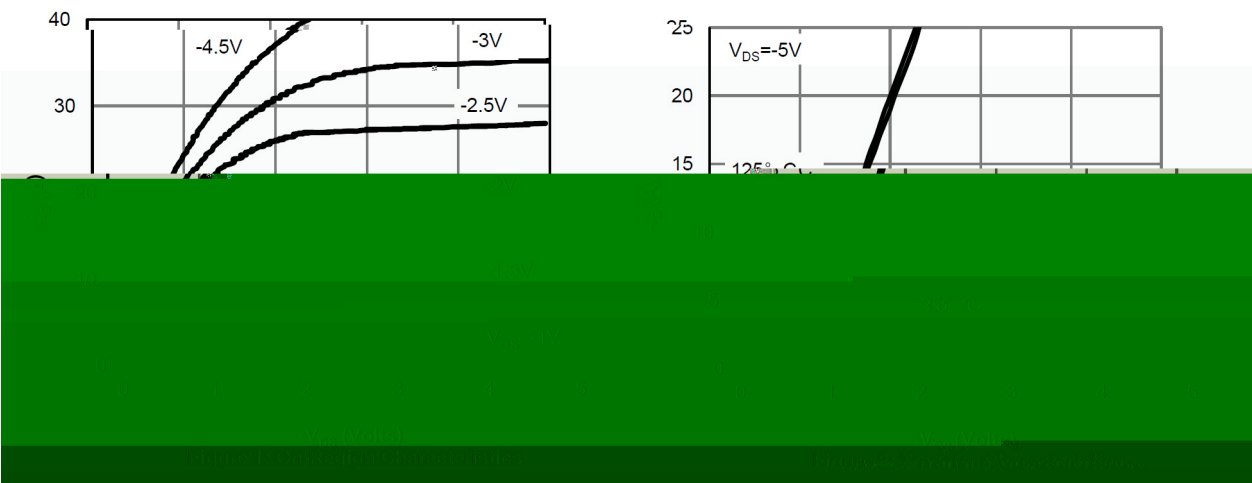
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	-5.3	A
Drain Current-Continuous($T_A = 100^\circ\text{C}$)	I_D	-3.3	A
Drain Current-Pulsed	I_{DM}	-21.2	A
Maximum Power Dissipation	P_D	1.3	W
Maximum Power Dissipation($T_A = 100^\circ\text{C}$)	P_D	0.5	W
Operating Junction Temperature Range and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	96	$^\circ\text{C/W}$

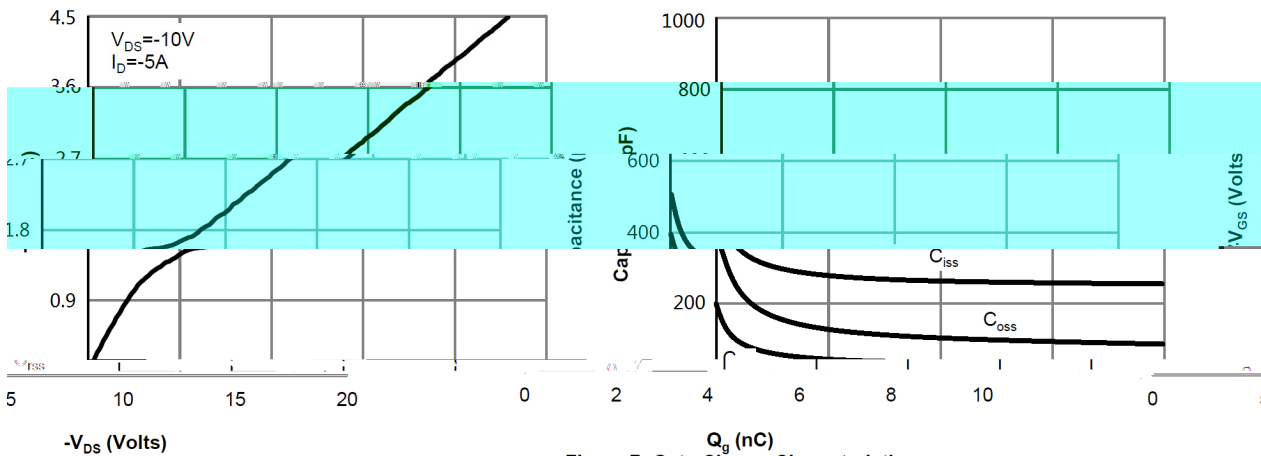
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$B_{V_{DS}}$	$V_{GS}=0V \quad I_D = -250\mu A$	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-20V \quad V_{GS}=0V$			-1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 10V \quad V_{DS}=0V$			± 10	μA
Gate Threshold Voltage	V_{TH}	$V_{DS}=V_{GS} \quad I_D=-250\mu A$	-0.5		-1.0	V
Drain-Source On-State Resistance	R_{DS}	$V_{GS}=-4.5V \quad I_D=-2.5A$		25.5	33.2	$m\Omega$
		$V_{GS}=-2.5V \quad I_D=-2.0A$		35.2	46.8	
Gate resistance	R_g	$V_{GS}=0V, \quad V_{DS}=0V, \quad f=1.0MHz$		580		Ω
Input Capacitance	C_{iss}	$V_{DS}=-10V \quad V_{GS}=0V \quad f=1MHz$		260		pF
Output Capacitance	C_{oss}			105		
Reverse Transfer Capacitance	C_{rss}			20		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-10V \quad V_{GS}=-4.5V \quad R_{GEN}=3\Omega \quad R_L=2\Omega$		12		ns
Rise Time	t_r			35		
Turn-Off Delay Time	$t_{d(off)}$			30		
Fall Time	t_f			10		
Total Gate Charge	Q_g	$V_{DS}=-10V \quad I_{DS}=-5A \quad V_{GS}=-4.5V$		9		nC
Gate-Source Charge	Q_{gs}			1.5		
Gate-Drain Charge	Q_{gd}			1.5		
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V \quad I_{DS}=-1A$			-1.2	V
Reverse Recovery Time	t_{rr}	$I_F=-5A, \quad dI/dt=100A/\mu s$		170		ns
Reverse Recovery Charge	Q_{rr}	$I_F=-5A, \quad dI/dt=100A/\mu s$		60		nC

/ Electrical Characteristic Curve



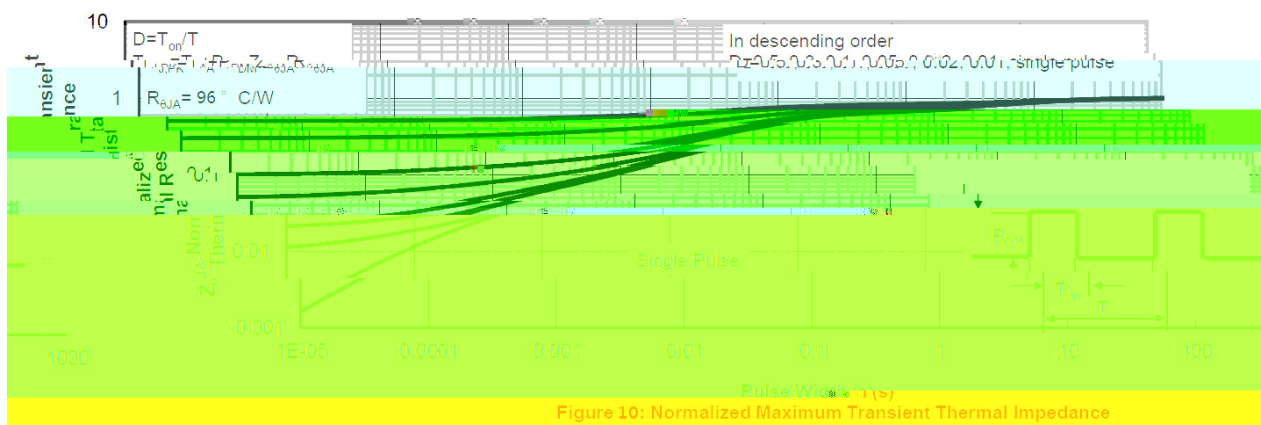
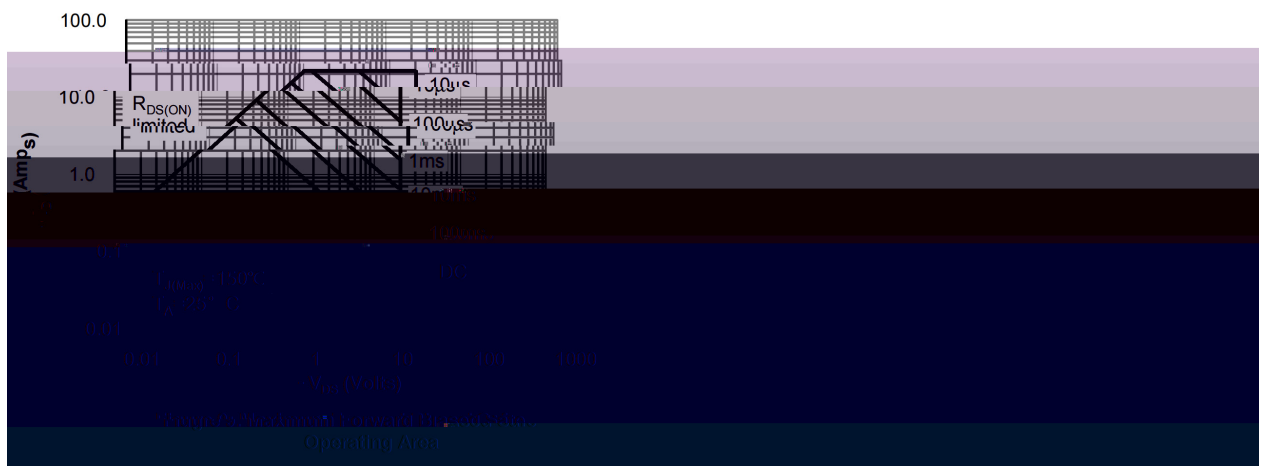
/ Electrical Characteristic Curve



8: Capacitance Characteristics

Figure 7: Gate-Charge Characteristics

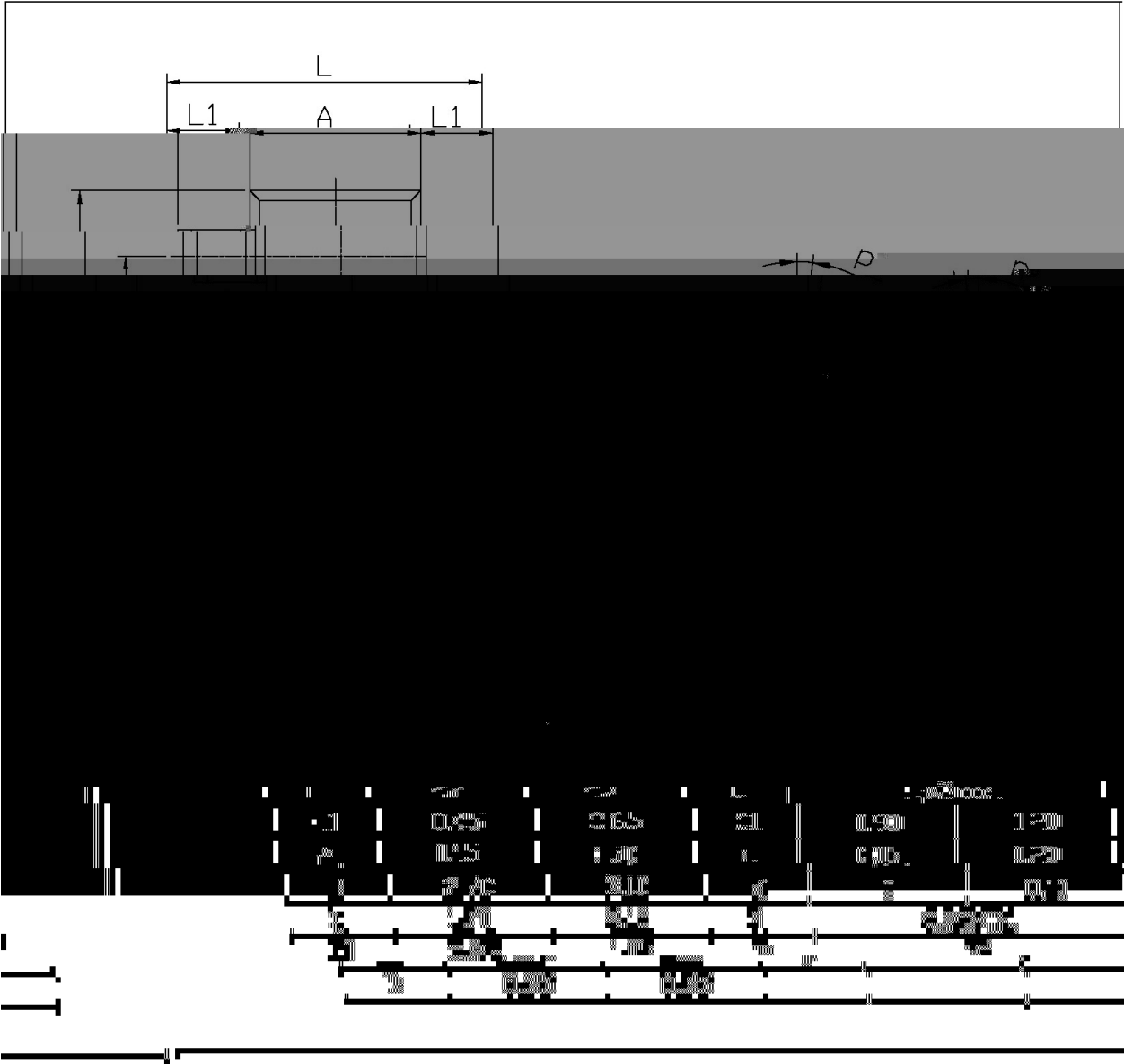
Figure



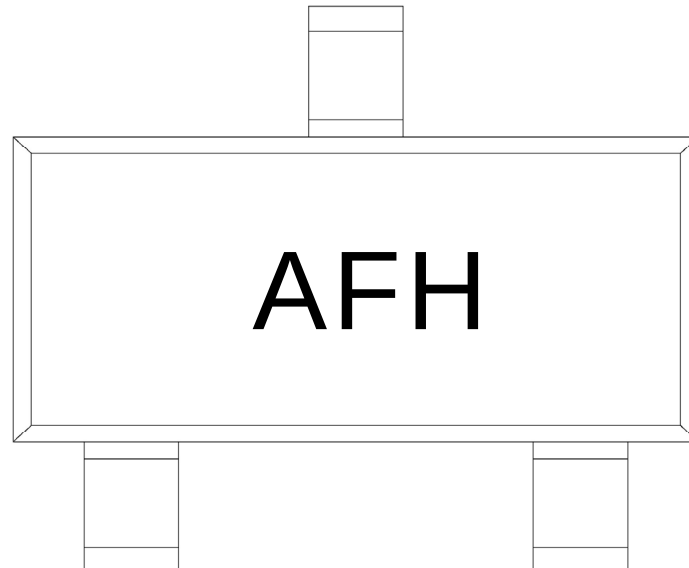
/ Package Dimensions

SOT-23

单位：mm



/ Marking Instructions



H:

AF:

Note:

H: Company Code

AF Product Type Code

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

Note:

1. Preheating: 150~180℃, Time: 60~90sec.
2. Peak Temp.: 245±5℃, Duration: 5±0.5sec.
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

6±0.2mm 0.5mm±0.02mm 0.1mm±0.01mm 0.05mm±0.005mm 0.02mm±0.002mm