Descriptions

This is -16V -7A P-Channel MOSFET in a SOT23-3 Plastic Package

Features

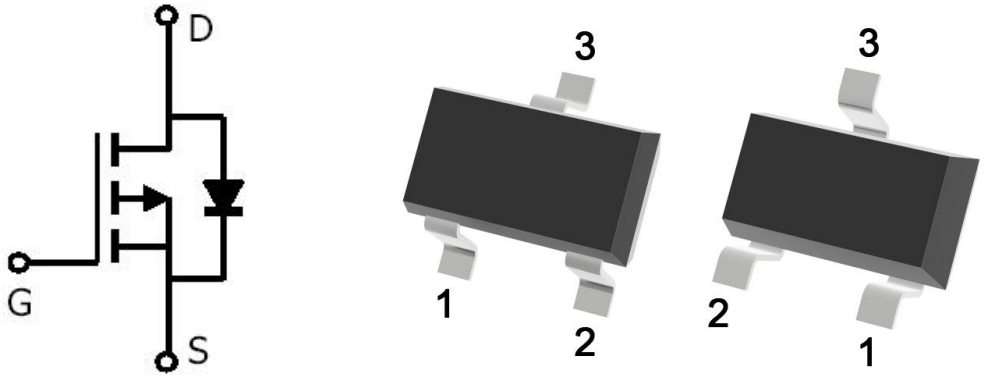
HF Product

Parameter	Value	Unit
V_{DS}	-16	V
$R_{DS(ON)MAX}.V_{GS}$=-4.5V	20	mΩ
$R_{DS(ON)MAX}.V_{GS}$=-2.5V	25	mΩ
$R_{DS(ON)MAX}.V_{GS}$=-1.8V	100	mΩ
I_D	-7	A

Applications

- Power Management in Notebook computer
- Portable Equipment
- Battery powered systems

Equivalent Circuit & Pinning



SOT23-3 PIN1: G PIN 2: S PIN 3: D

Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-16	V
Gate-Source Voltage	V_{GSS}	±12	V
Continuous Drain Current	I_D	-7.0	A
Pulsed Drain Current	I_{DM}	-30	A
Power Dissipation for Single Operation	P_D	1.2	W
Maximum Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	100	℃/W

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA	V_{GS}=0V	-16	-17		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-12V	V_{GS}=0V			-1.0	μA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V	V_{GS}=±12V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS	I_D=-250μA	-0.5	-0.6	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V	I_D=-3.5A		16.7	20	mΩ
		V_{GS}=-2.5V	I_D=-3.5A		22.5	25	
		V_{GS}=-1.8V	I_D=-1A		32.5	100	
Diode Forward Voltage	V_{SD}	I_S=-1A	V_{GS}=0V			-1.2	V
Gate resistance	Rg	V_{GS}=0V, f=1MHz	V_{DS}=0V,		5.8		Ω
Input Capacitance	C_{iss}	V_{GS}=0V f=1MHz	V_{DS}=-5V		1690		pF
Output Capacitance	C_{oss}				960		
Reverse Transfer Capacitance	C_{rss}				745		

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	V_{GS}=-4.5V, V_{DS}=-10V, I_D=-7.0A		13		nC
Gate Source Charge	Q_{gs}			2.5		
Gate Drain Charge	Q_{gd}			4.2		
Turn–On Delay Time	$t_{d(on)}$	V_{GS}=-4.5V R_L=1.45Ω V_{DS}=-10V R_{GEN}=3Ω		7.5		ns
Turn–On Rise Time	t_r			29.2		
Turn–Off Delay Time	$t_{d(off)}$			103		
Turn–Off Fall Time	t_f			50		

Electrical Characteristic Curve

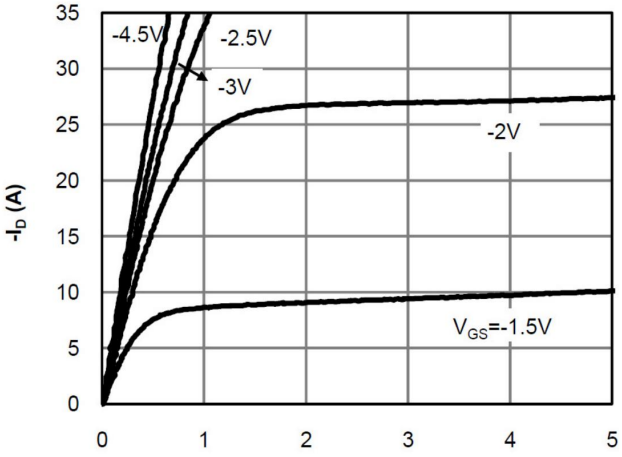


Fig 1: On-Region Characteristics

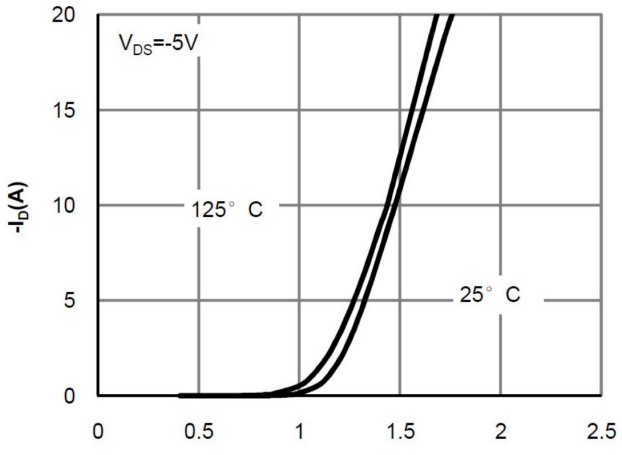


Figure 2: Transfer Characteristics

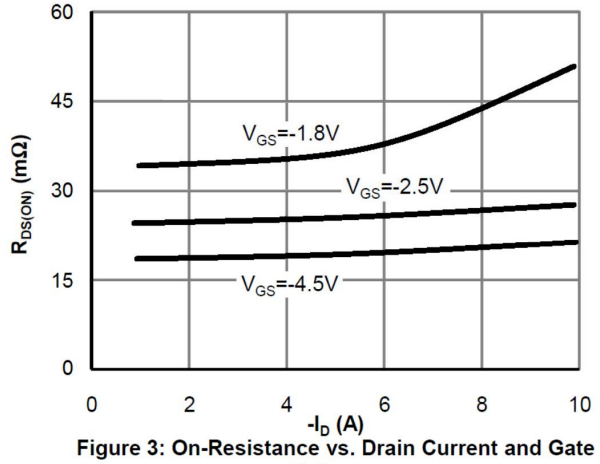


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

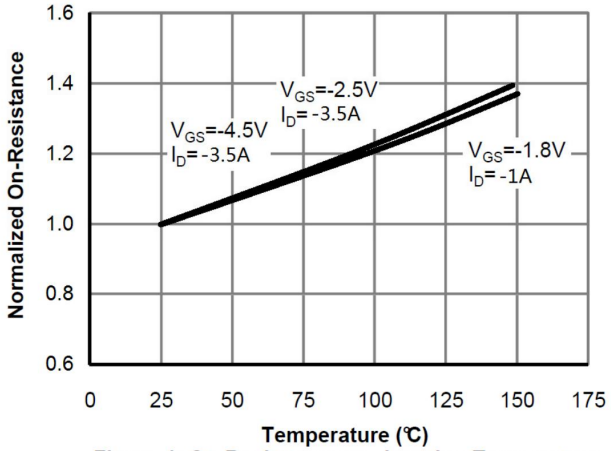


Figure 4: On-Resistance vs. Junction Temperature

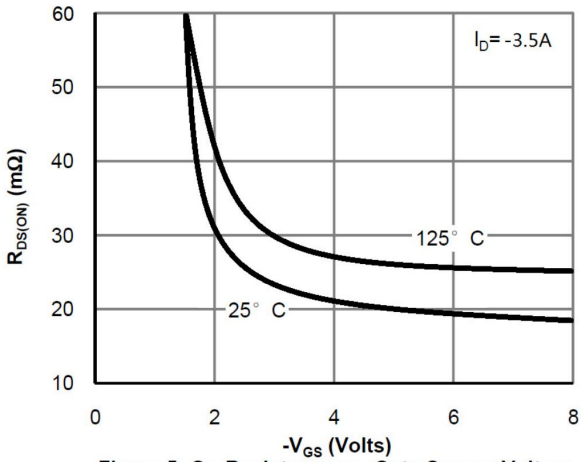


Figure 5: On-Resistance vs. Gate-Source Voltage

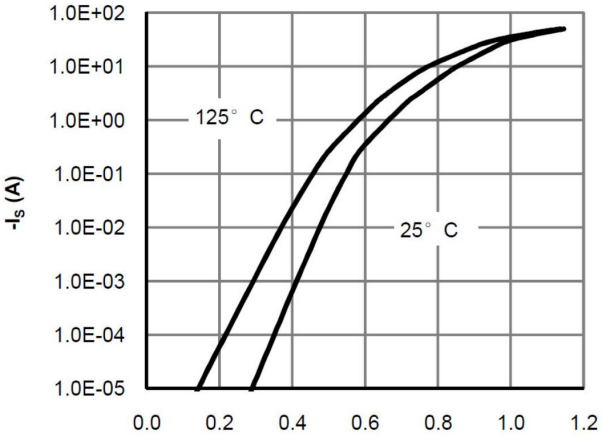


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

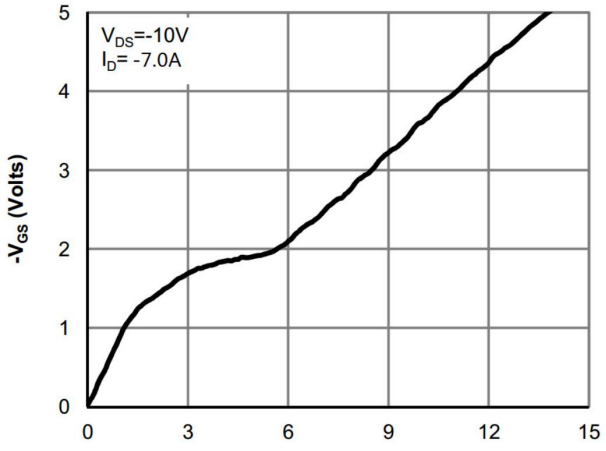


Figure 7: Gate-Charge Characteristics

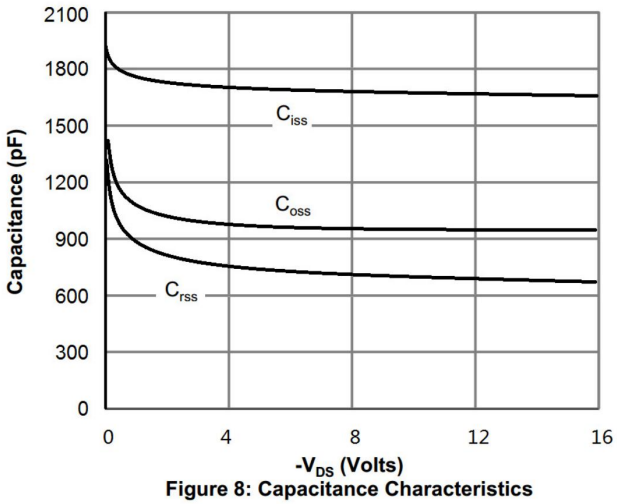


Figure 8: Capacitance Characteristics

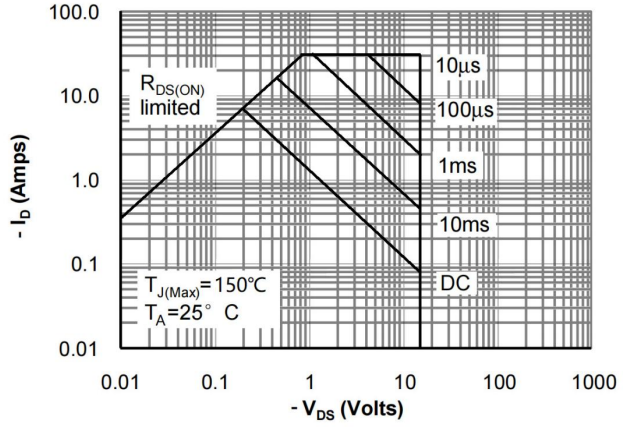


Figure 9: Maximum Forward Biased Safe Operating Area

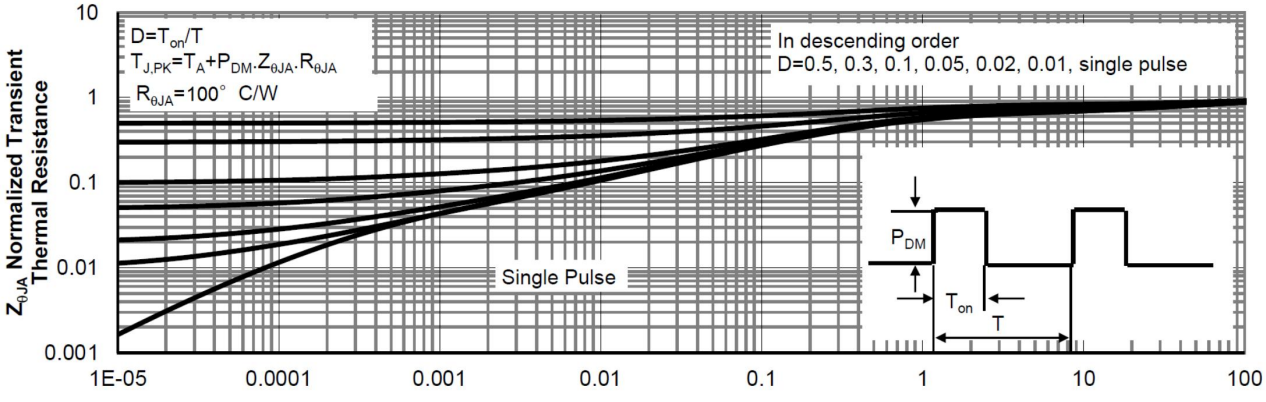
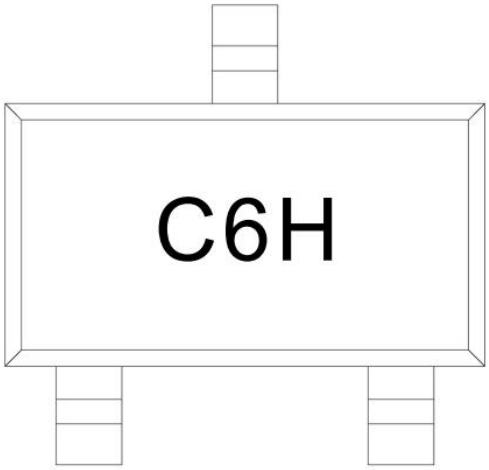


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

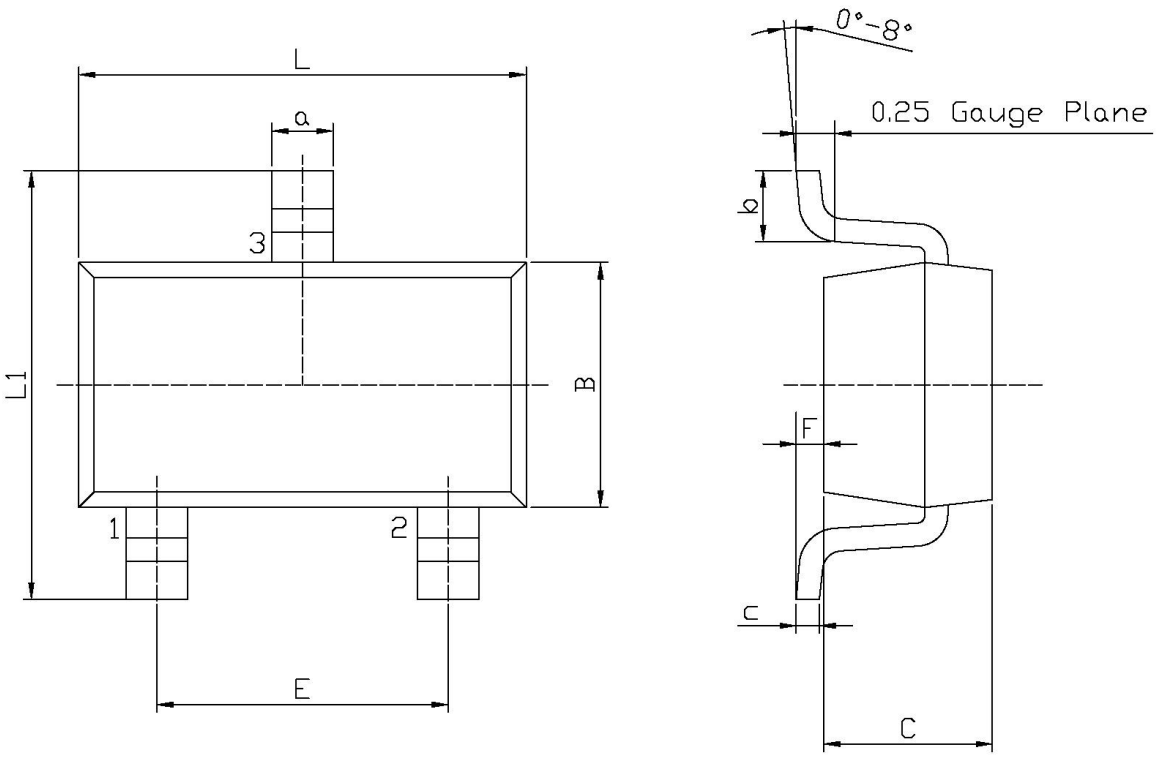
C6H: Product Type Code

Packaging SPEC

REEL

Package Type	Units					Dimension (unit：mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT23-3	3,000	10	30,000	4	120,000	7″ ×8	210×205×205	445×435×230

Package Outline Dimensions



Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	a	0.35	0.50
B	1.50	1.70	c	0.10	0.20
C	0.90	1.30	b	0.35	0.55
L1	2.60	3.00	F	0	0.15
E	1.80	2.00			

SOT23-3