

Descriptions

This -60V P-Channel MOSFET in a SOT-23-3 Plastic Package.

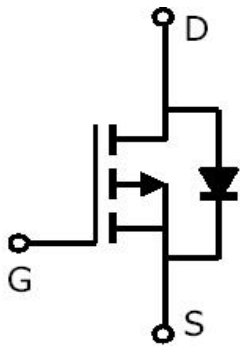
Features

- Ultra Low on-resistanceHF Product
- Fast switching
- Low on voltage
- Halogen-free Product

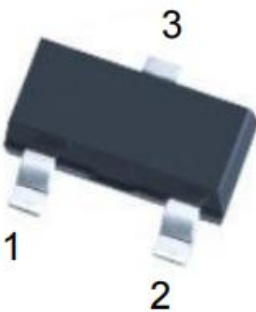
Applications

PWM application & Load switch

Equivalent Circuit



Pinning



PIN1: Gate PIN 2: Source PIN 3: Drain

Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit	
Drain–Source Voltage	V_{DSS}	-60	V	
Gate–Body Leakage Voltage	V_{GSS}	± 20	V	
Drain Current - Continuous	I_D	-5	A	
Power Dissipation (Surface Mounted on FR4 Board, $t \leq 10$ sec.)	P_D	1.5	W	
Operating and Storage Temperature Range	T_J, T_{STG}	-55~150	°C	
Maximum Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$	118.6	°C/W
Maximum Junction-to-Ambient	Steady-State		161.6	°C/W
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	83.3	°C/W

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=-250\mu A$	-60	-63		V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1	-1.5	-2.5	V
Static Drain–Source On–Resistance	$R_{DS(on)}$	$V_{GS}=-10V$ $I_D=-2A$		84	100	mΩ
		$V_{GS}=-4.5V$ $I_D=-1A$		103	125	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60V$ $V_{GS}=0V$			-1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=-20V$			-	nA
		$V_{GS}=20V$			100	nA
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=-1A$ $T_J=25^\circ C$			-1.2	V
Input Capacitance	C_{iss}	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		885		pF
Output Capacitance	C_{oss}			90		
Reverse Transfer Capacitance	C_{rss}			64		
Total Gate Charge	Q_g	$V_{DS}=-30V$ $V_{GS}=-10.0V$ $I_D=-5A$		25		nC
Gate-to-Source Charge	Q_{gs}			3		
Gate-to-Drain Charge	Q_{gd}			7		
Turn–On Delay Time	$t_{d(on)}$	$V_{DD}=-30V$ $V_{GS}=-10V$ $R_L=7.5\Omega$ $R_G=3\Omega$		8		ns
Turn–On Rise Time	t_r			4		
Turn–Off Delay Time	$t_{d(off)}$			32		
Turn–Off Fall Time	t_f			7		

Electrical Characteristic Curve

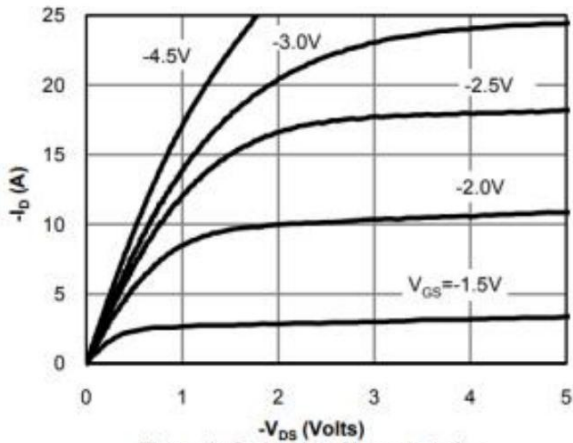


Figure 1: On-Region Characteristics

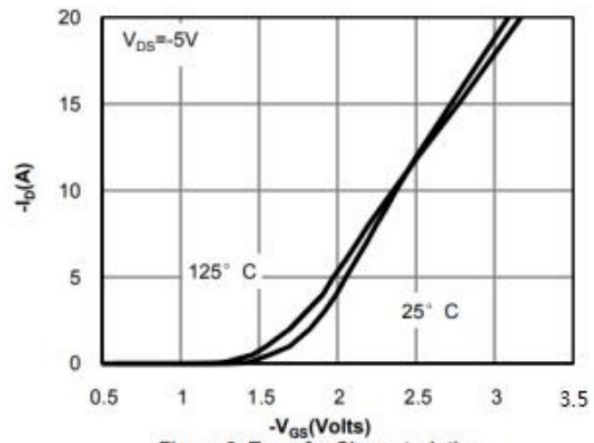


Figure 2: Transfer Characteristics

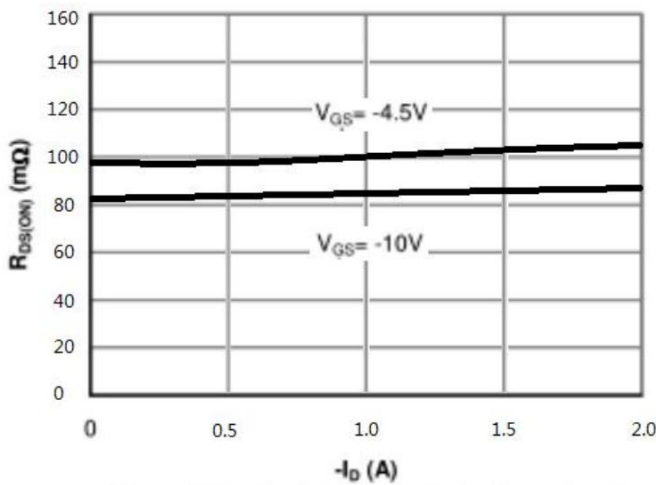


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

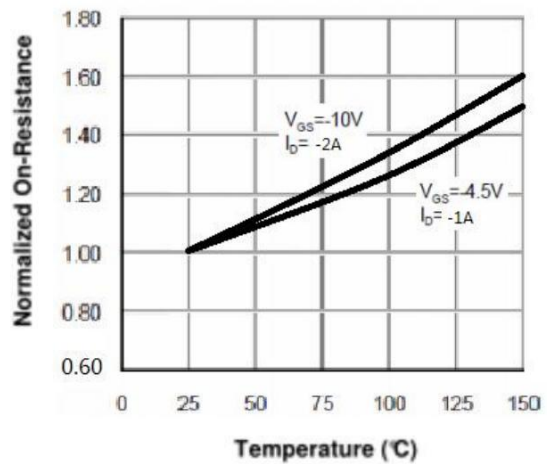


Figure 4: On-Resistance vs. Junction Temperature

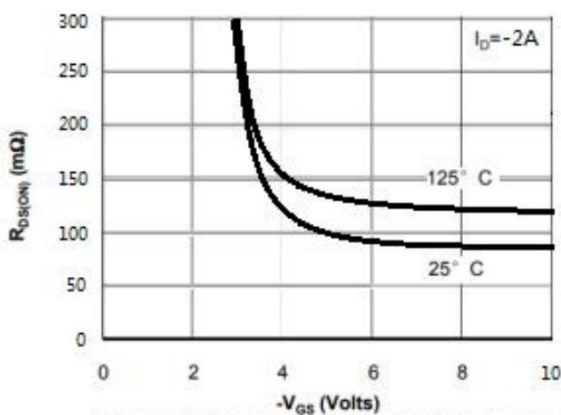


Figure 5: On-Resistance vs. Gate-Source Voltage

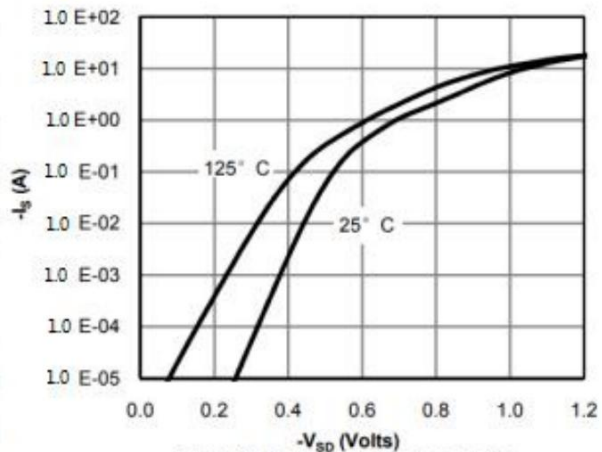


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

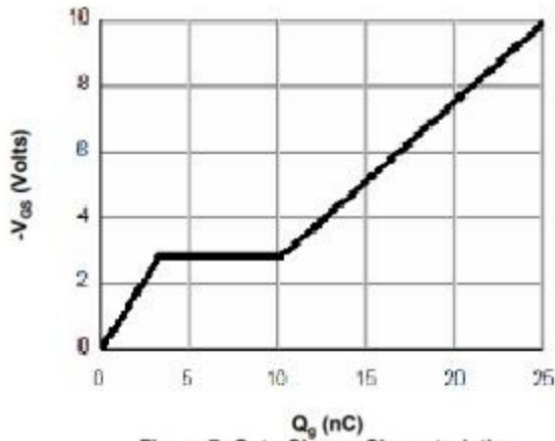


Figure 7: Gate-Charge Characteristics

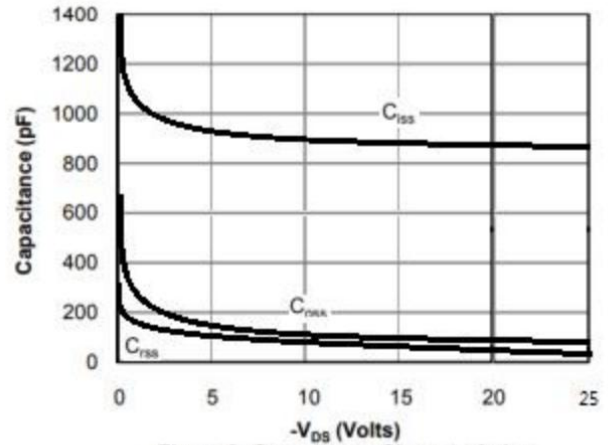


Figure 8: Capacitance Characteristics

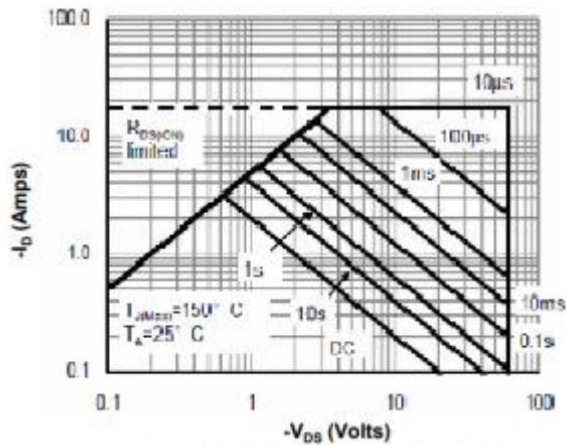


Figure 9: Maximum Forward Biased Safe Operating Area

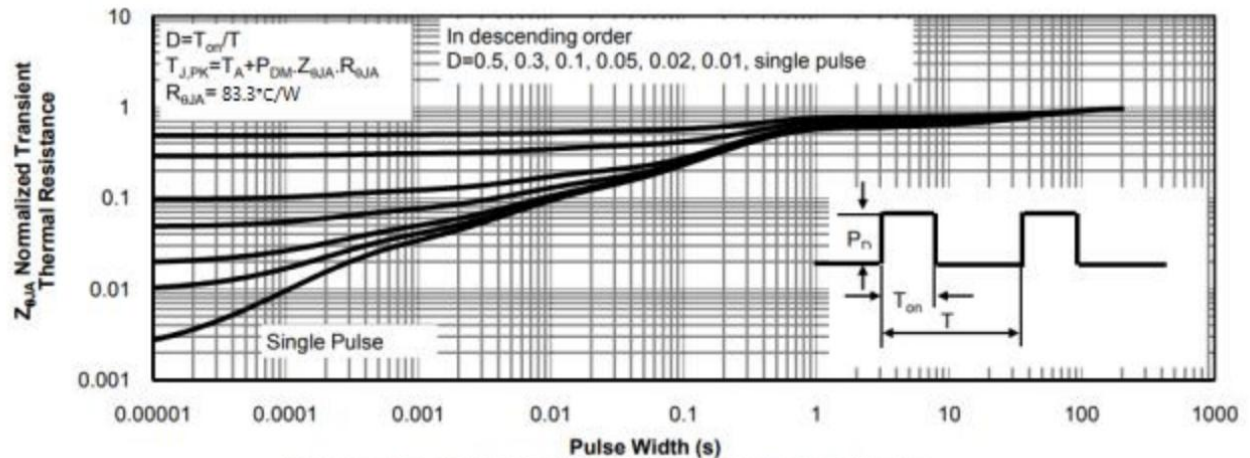
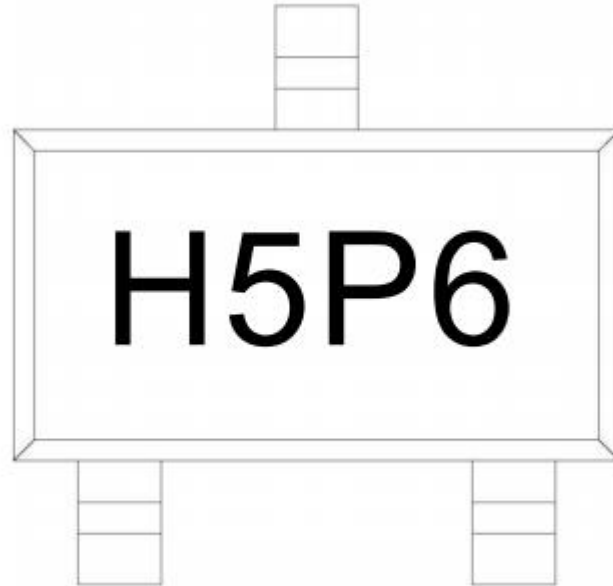


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

H: Company Code.

5P6: Product Type

Packaging SPEC

REEL INFORMATION

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
SOT23-3	3,000	10	30,000	4	120,000	7" x8	210x205x205	445x230x435

Package Outline Dimensions

