

Descriptions

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

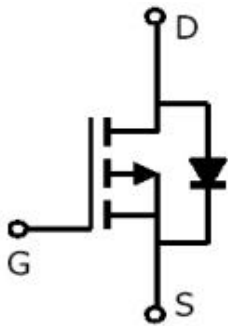
Features

- Ultra Low on-resistance
- Fast switching
- Low on voltage
- Halogen-Free Product

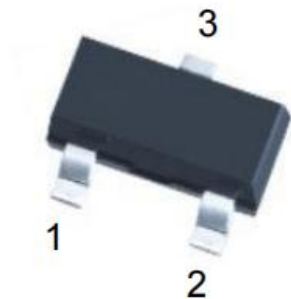
Applications

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	
Pulsed Drain Current	I _{DM}	-18	A	
Power Dissipation (Surface Mounted on FR4 Board, t ≤ 10 sec.)	P _D	1.5	W	
Operating and Storage Temperature Range	T _J , T _{STG}	-55~150	°C	
Maximum Junction-to-Ambient	R _{θJA}	t ≤ 10s	118.6	°C/W
Maximum Junction-to-Ambient		Steady-State	161.6	°C/W
Maximum Junction-to-Lead	R _{θJL}	Steady-State	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 =-250μA	-60	-63		V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250μA	-1	-1.5	-2.5	V
Static Drain-Source On-Resistance	R _{DSS(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			-100	nA
		V _{GS} =20V			100	nA
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =-1A T _J =25°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(-10V)}	V _{DS} =-30V V _{GS} =-10.0V I _D =-5A		25		nC
Total Gate Charge	Q _{g(-4.5V)}			9.6		
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 =7.5Ω R _G =3Ω		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

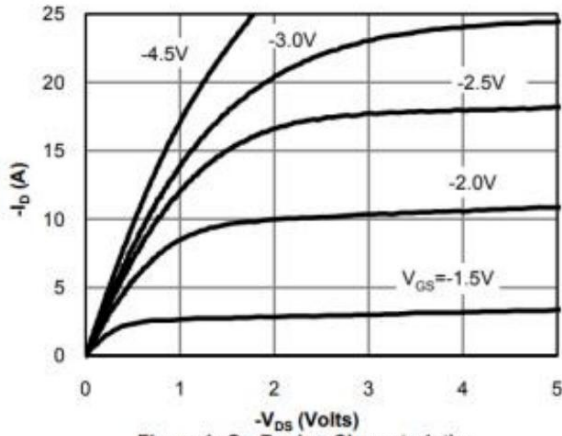


Figure 1: On-Region Characteristics

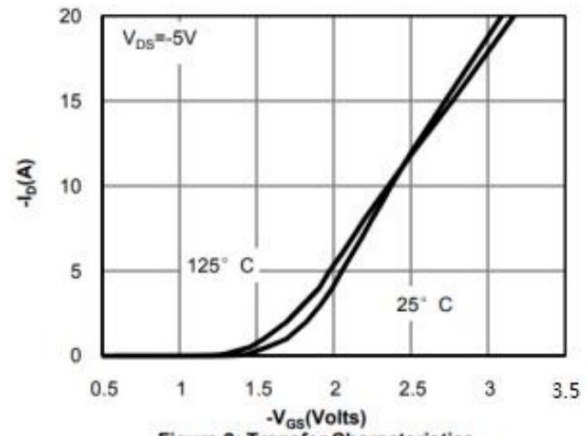


Figure 2: Transfer Characteristics

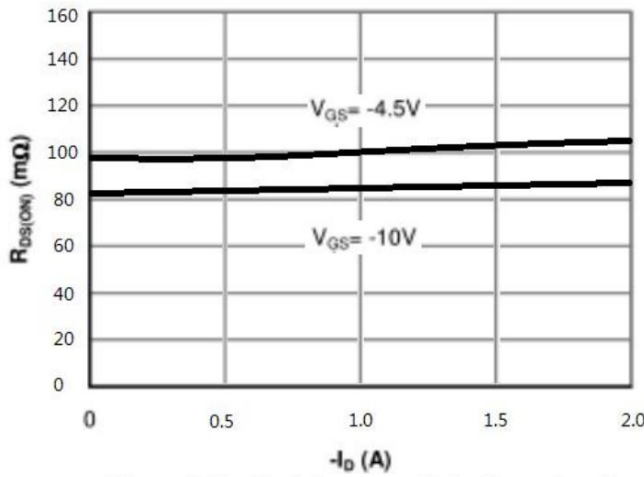


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

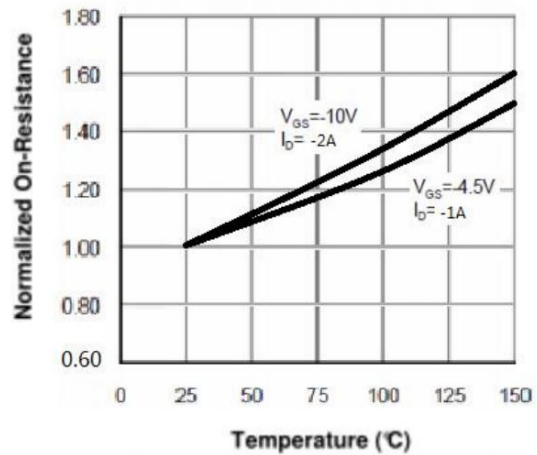


Figure 4: On-Resistance vs. Junction Temperature

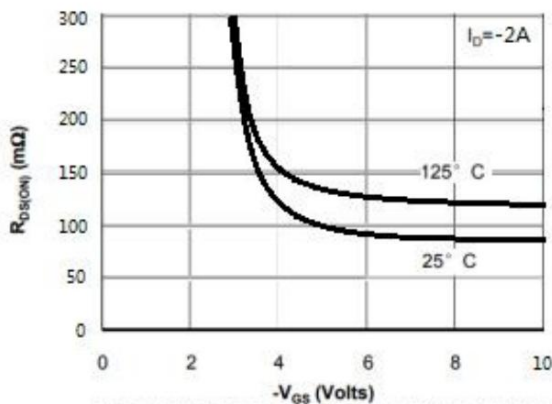


Figure 5: On-Resistance vs. Gate-Source Voltage

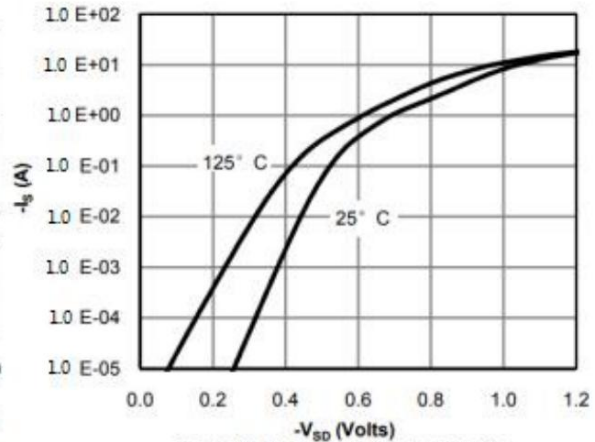


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

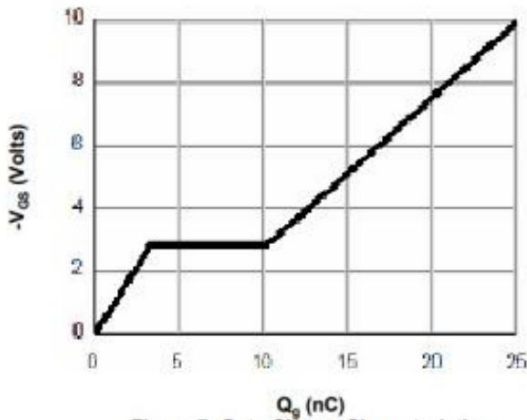


Figure 7: Gate-Charge Characteristics

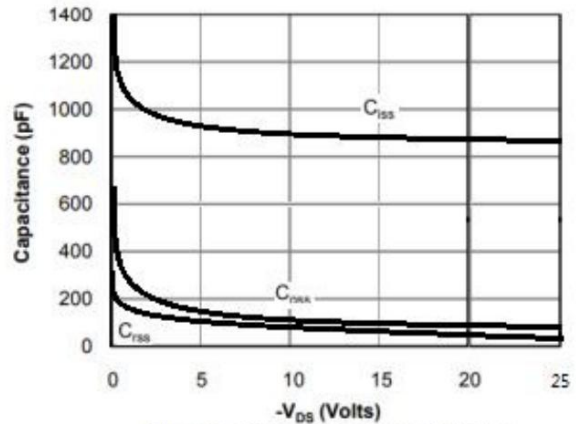


Figure 8: Capacitance Characteristics

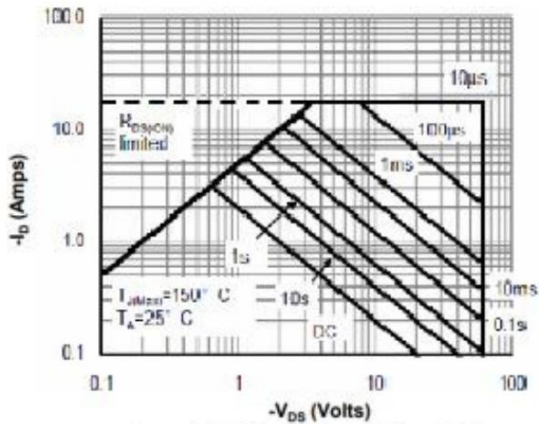


Figure 9: Maximum Forward Biased Safe Operating Area

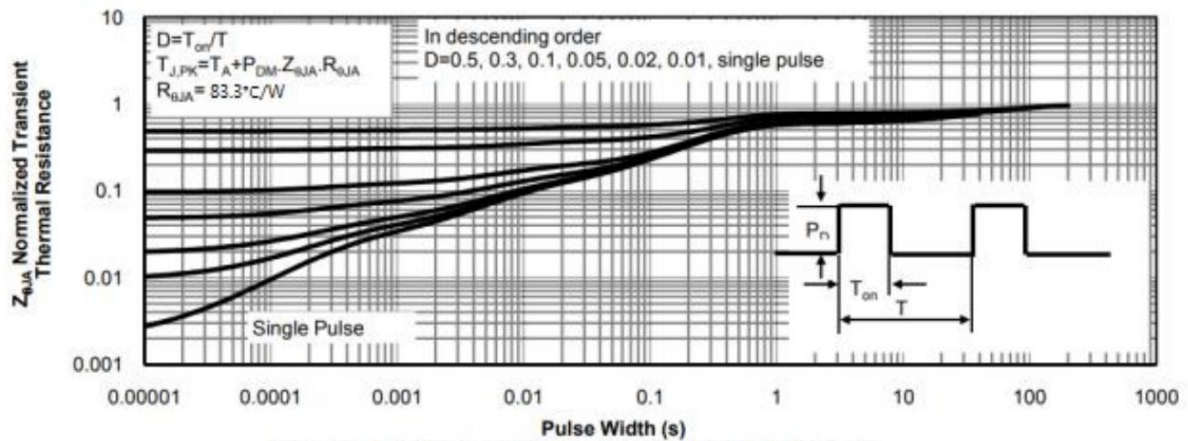
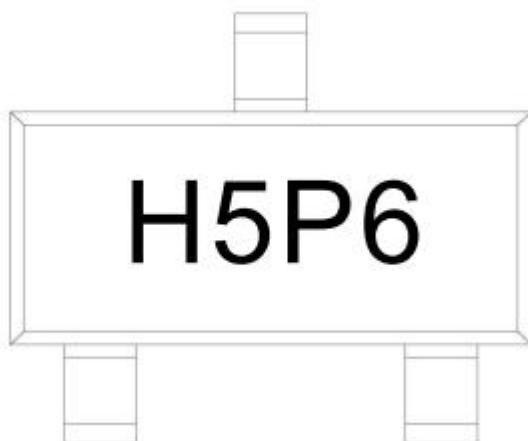


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

H: Halogen Free

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
SOT-23	3,000	10	30,000	6	180,000	7" x8	180×120×180	390×385×205

Package Outline Dimensions

SOT-23

单位: mm

