SOT-23 P

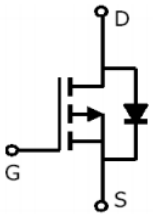
P- CHANNEL MOSFET in a SOT-23 Plastic Package.

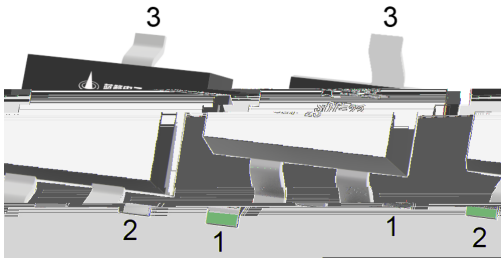
AEC-Q101

Ultra Low on-resistance. fast switching.Low on voltage, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

PWM

PWM application & Load switch, Meet the stringent requirements of automotive applications.





PIN1 G PIN 2 S PIN 3 D

Marking	Q5P6

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	
Maximum Junction-to-Ambient	t ≤ 10s	$R_{\theta JA}$	118.6	℃/W
Maximum Junction-to-Ambient	Steady-State		161.6	℃/W
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	83.3	℃/W

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	$R_{DS(on)}$	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			-100	nA
		V_{GS}=20V			100	nA
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=-1A T_J=25			-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		

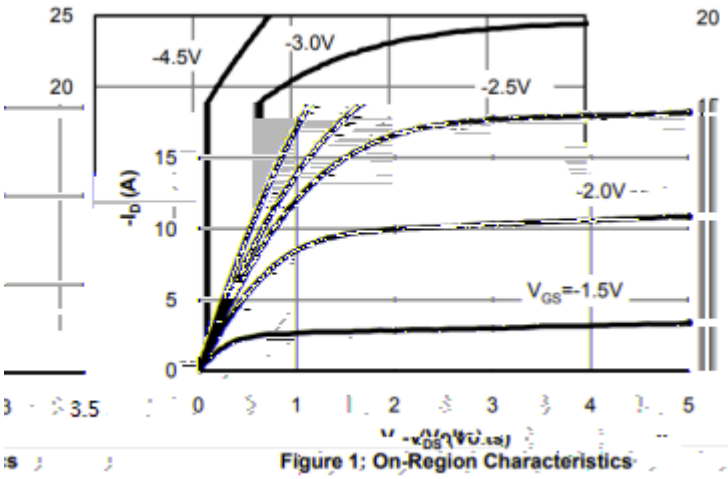


Figure 1: On-Region Characteristics

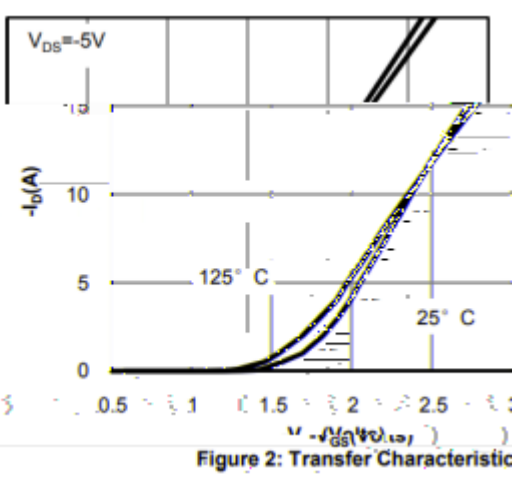


Figure 2: Transfer Characteristic

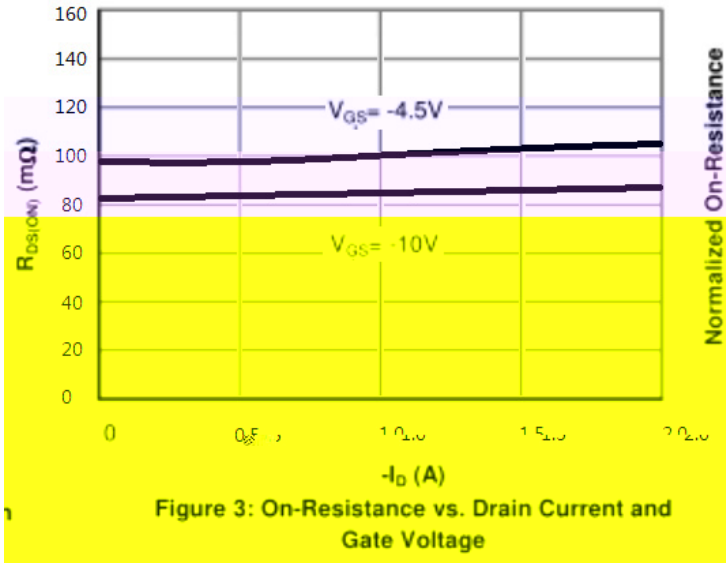


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

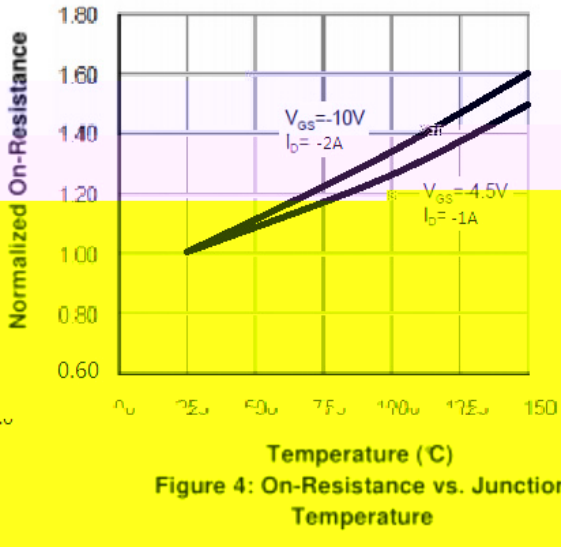


Figure 4: On-Resistance vs. Junction Temperature

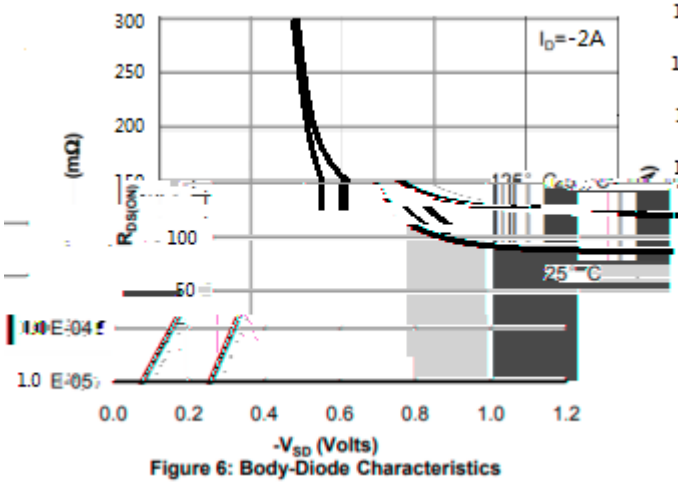


Figure 6: Body-Diode Characteristics

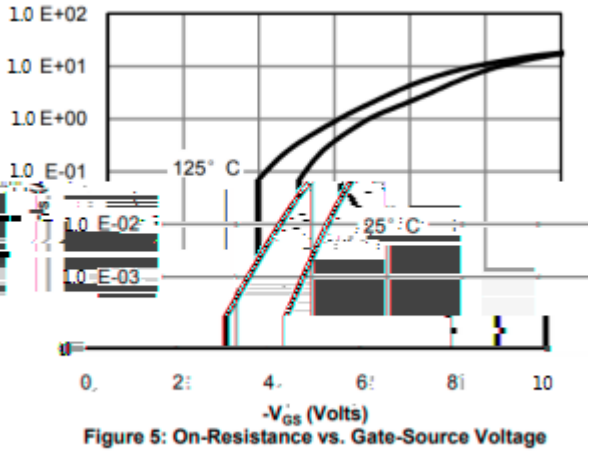


Figure 5: On-Resistance vs. Gate-Source Voltage

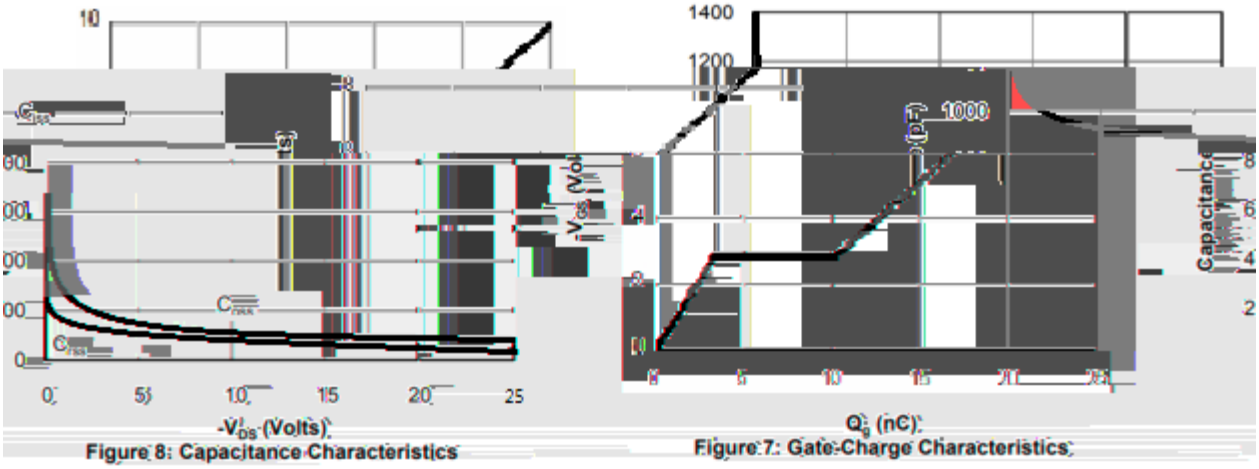


Figure 8: Capacitance Characteristics

Figure 7: Gate-Charge Characteristics

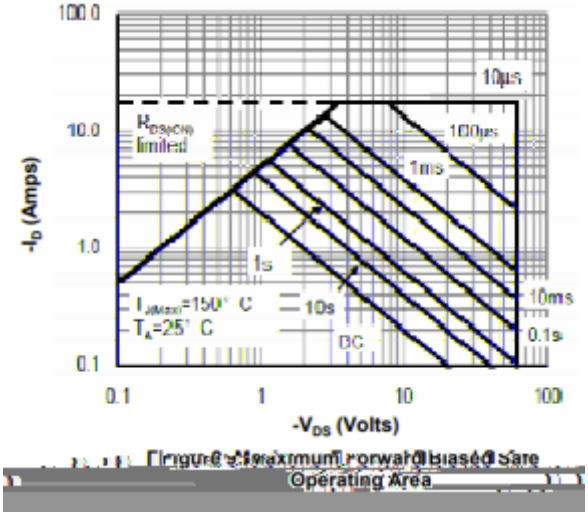


Figure 9: Maximum Forward Biased Safe Operating Area

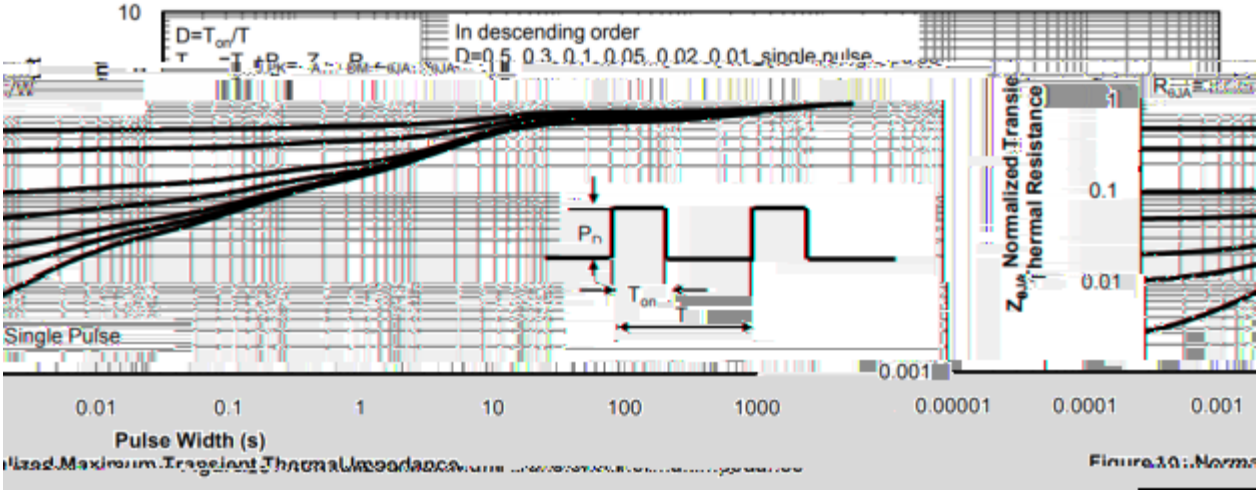
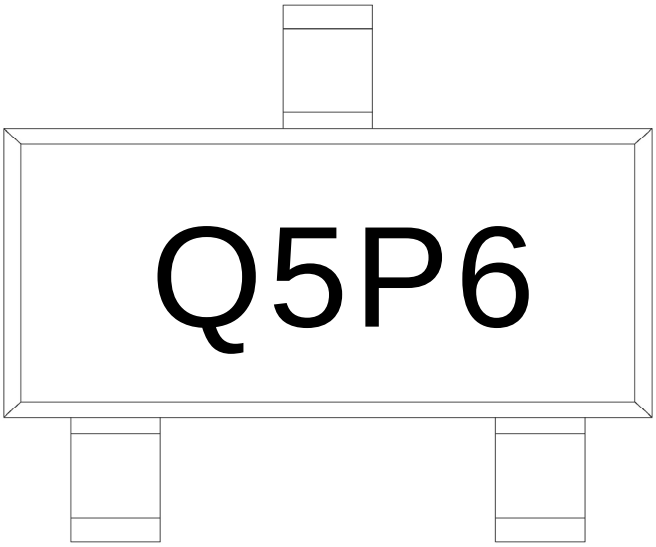


Figure 10: Normalized Maximum Transient Thermal Impedance



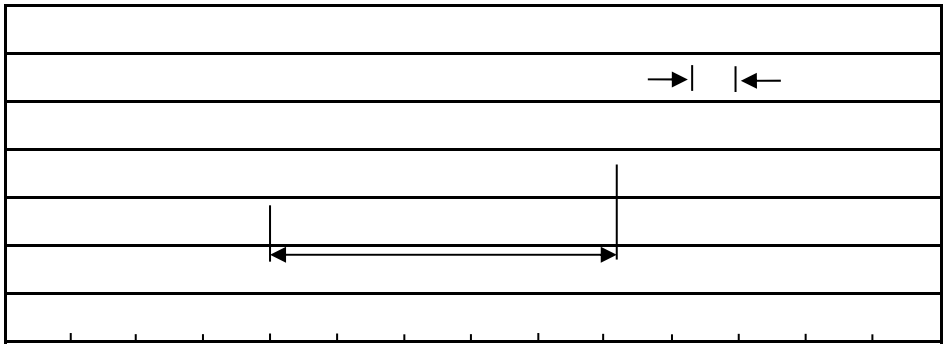
Q

5P6

Note:

Q: Automobile halogen-free product Code

5P6: Product Type



Note:

1		150	200		60	120sec;	1.Preheating:150~200 , Time:60~120sec.
2		255±5				5±0.5sec;	2.Peak Temp.:255±5 , Duration:5±0.5sec.
3				2	10	/sec.	3.Cooling Speed: 2~10 /sec.

260±5	10±1 sec.	Temp.:260±5	Time:10±1 sec

/ REEL

Package Type	Units					Dimension		(unit mm³)
SOT-23	3,000	10	30,000	6	180,000	7″ ×8	180×120×180	390×385×205