/ Descriptions

SOT-23 P

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

/ Features

AEC-Q101

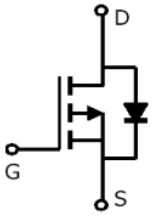
Ultra Low on-resistance. fast switching.Low on voltage, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

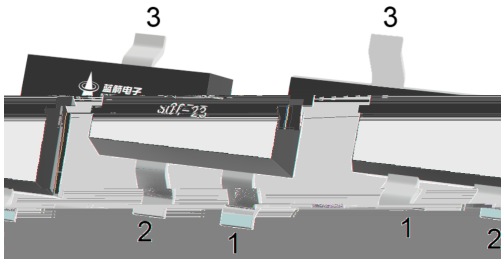
PWM

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

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 S PIN 3 D

/ Marking

See Marking Instructions.

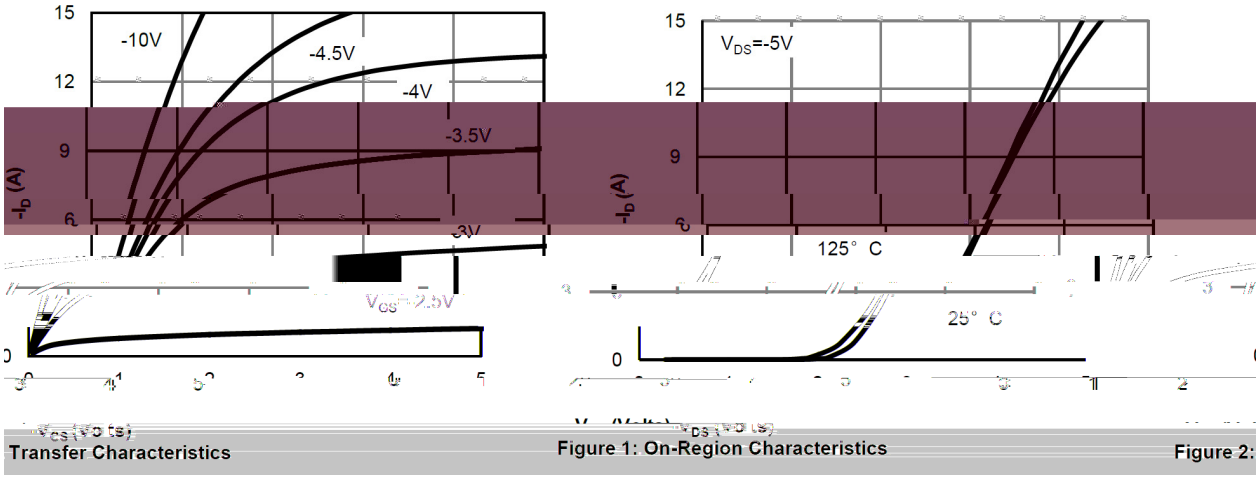
/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain–Source Voltage		V_{DSS}	-60	V
Gate–Body Leakage Voltage		V_{GSS}	±20	V
Drain Current – Continuous		I_D	-2.3	A
Pulsed Drain Current		I_{DM}	-9	A
Power Dissipation		P_D	1.25	W
Operating and Storage Temperature Range		T_J,T_{STG}	-55 150	
Maximum Junction-to-Ambient	t ≤ 10s	$R_{\theta JA}$	72	/W
Maximum Junction-to-Ambient	Steady-State		100	/W
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	64	/W

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V I_D=-250 A	-60	-75		V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250 A	-1	-1.9	-2.5	V
Static Drain–Source On–Resistance	$R_{DS(on)}$	V_{GS}=-10V I_D=-2A		135	150	m
		V_{GS}=-4.5V I_D=-1A		160	200	m
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-60V V_{GS}=0V			-1.0	A
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=-1A T_J=25			-1.2	V
Gate resistance	R_g	f=1MHz		6.5		
Input Capacitance	C_{iss}	V_{DS}=-25V V_{GS}=0V f=1.0MHz		800		pF
Output Capacitance	C_{oss}			45		
Reverse Transfer Capacitance	C_{rss}			35		
Total Gate Charge	$Q_{g(-10V)}$	V_{DS}=-10V V_{GS}=-10.0V I_D=-2A		12.3		nC
Total Gate Charge	$Q_{g(-4.5V)}$			6.3		
Gate-to-Source Charge	Q_{gs}			1.6		
Gate-to-Drain Charge	Q_{gd}			2.4		
Turn–On Delay Time	$t_{d(on)}$	V_{DS}=-10V V_{GS}=-10V R_L=5.4 R_{GEN}=3		12		ns
Turn–On Rise Time	t_r			20		
Turn–Off Delay Time	$t_{d(off)}$			20		
Turn–Off Fall Time	t_f			25		

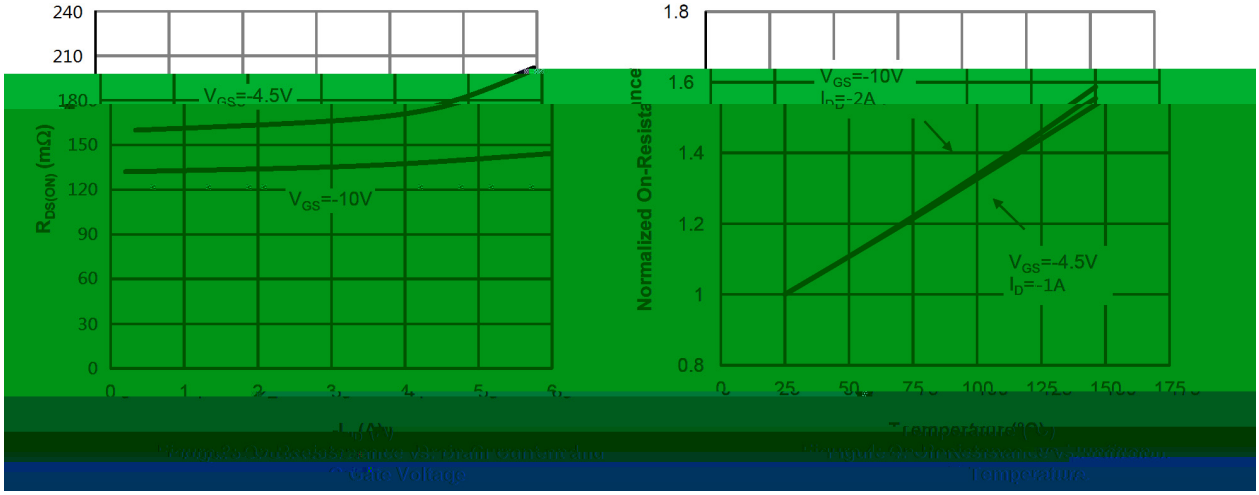
/ Electrical Characteristic Curve



Transfer Characteristics

Figure 1: On-Region Characteristics

Figure 2:



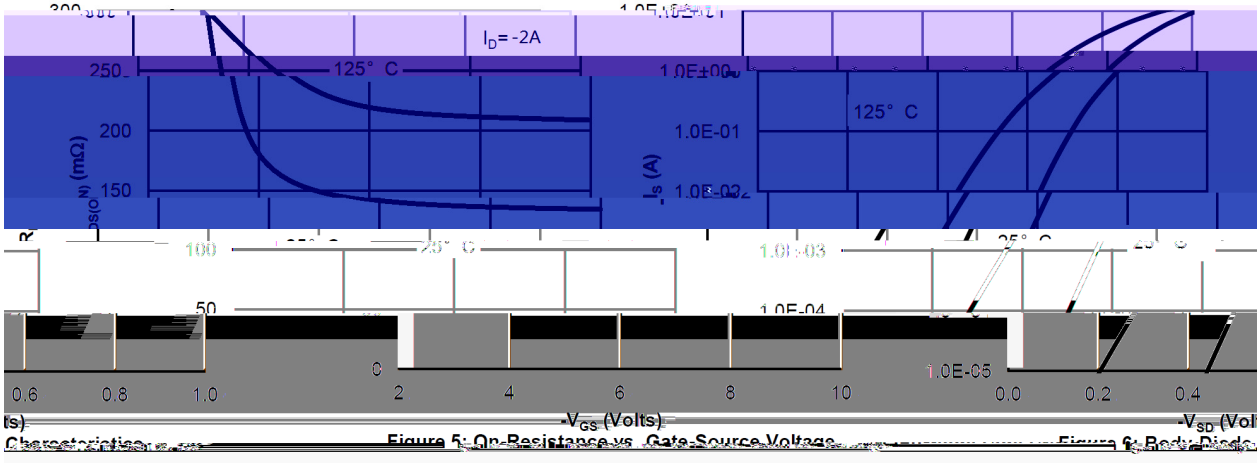
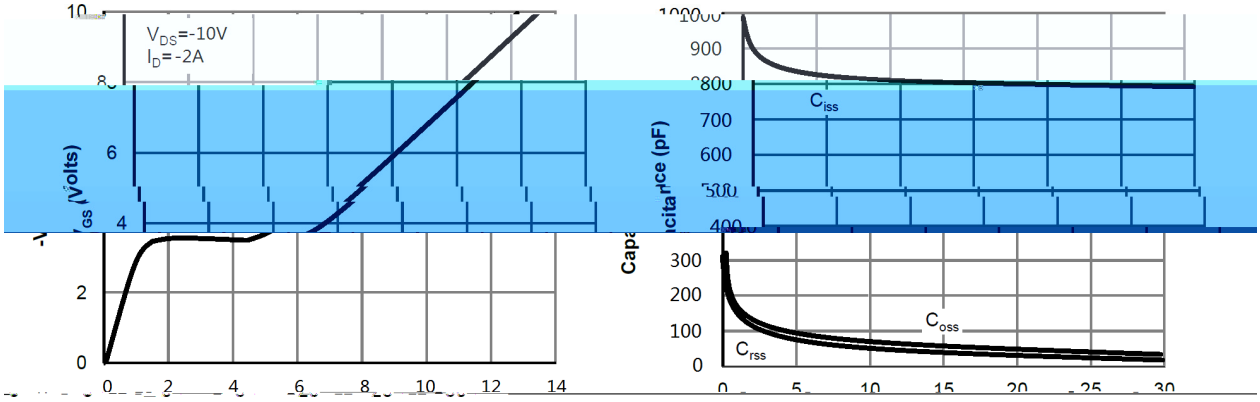


Figure 5: On-Resistance vs. Gate-Source Voltage

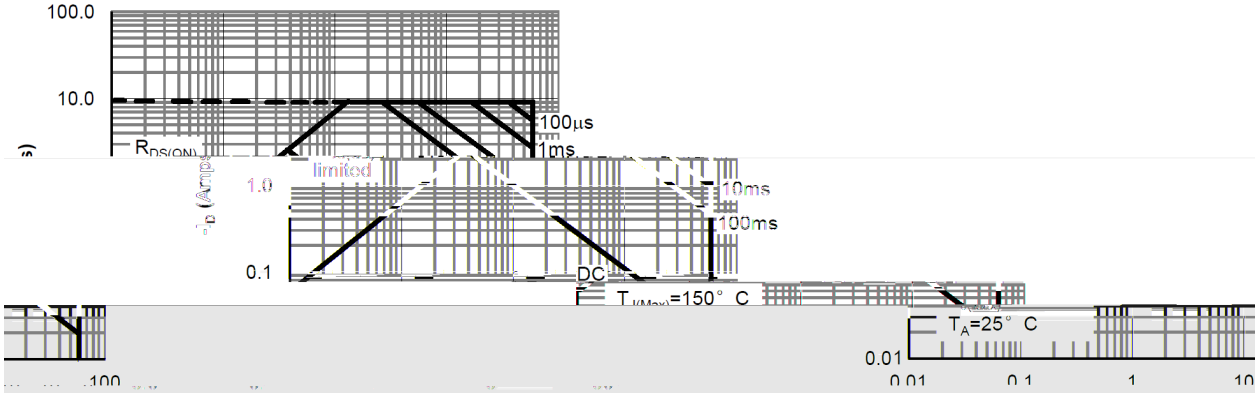
Figure 6: Body Diode

/ Electrical Characteristic Curve

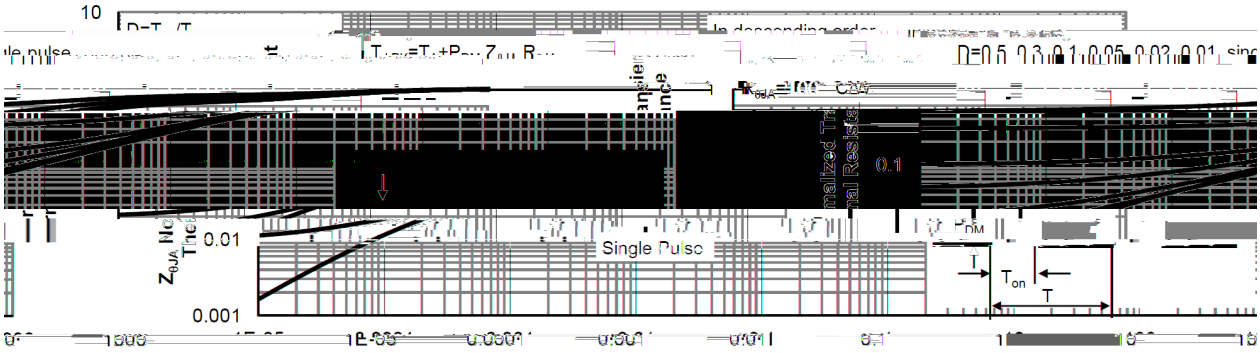


$-V_{DS}$ (Volts)
Figure 8: Capacitance Characteristics

Q_g (nC)
Figure 7: Gate-Charge Characteristics



$-V_{DS}$ (Volts)
V_{GS}> or equal to -4.5V
Figure 9: Maximum Forward Biased Safe Operating Area

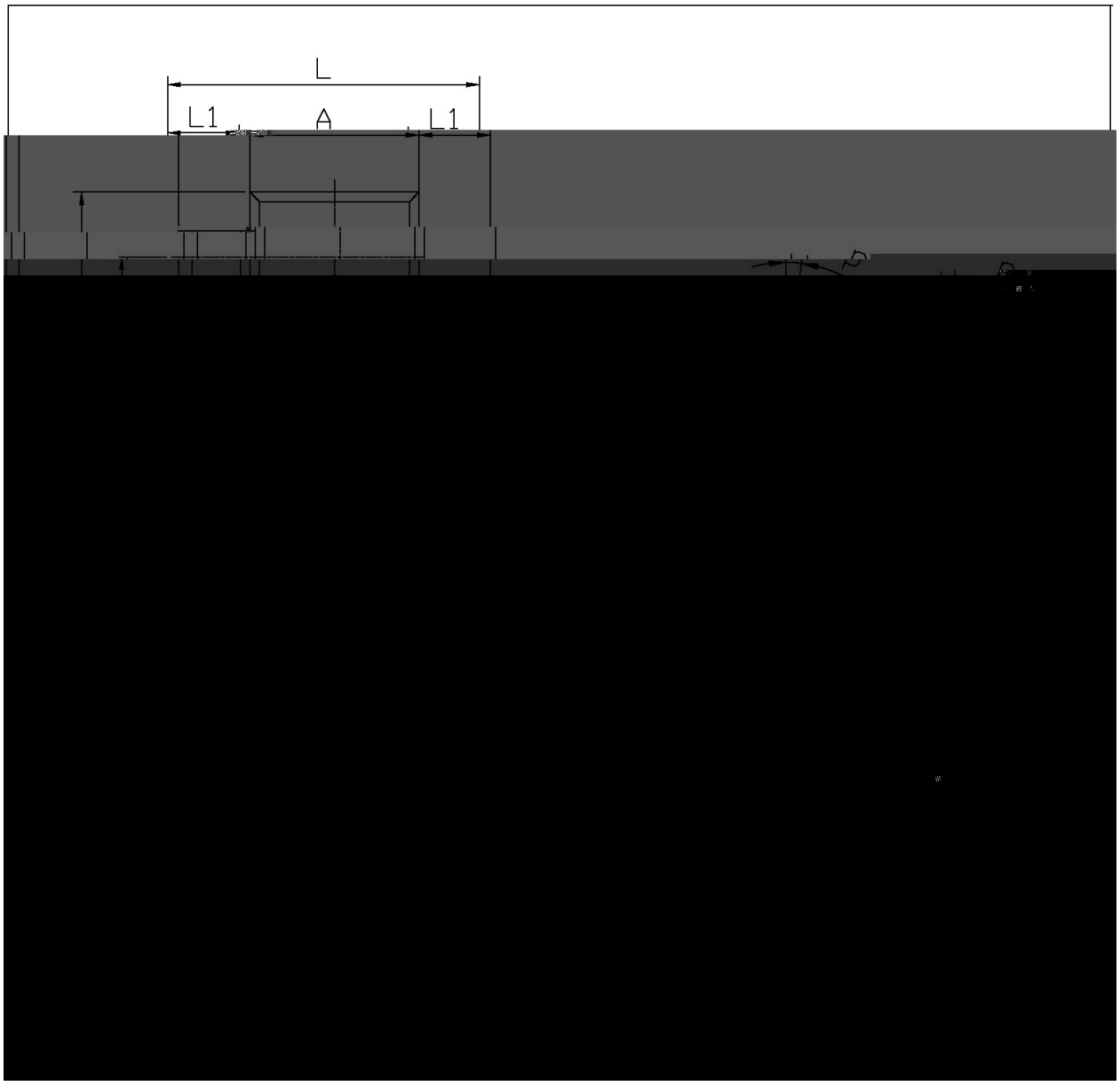


Pulse Width (s)
Figure 10: Normalized Maximum Transient Thermal Impedance

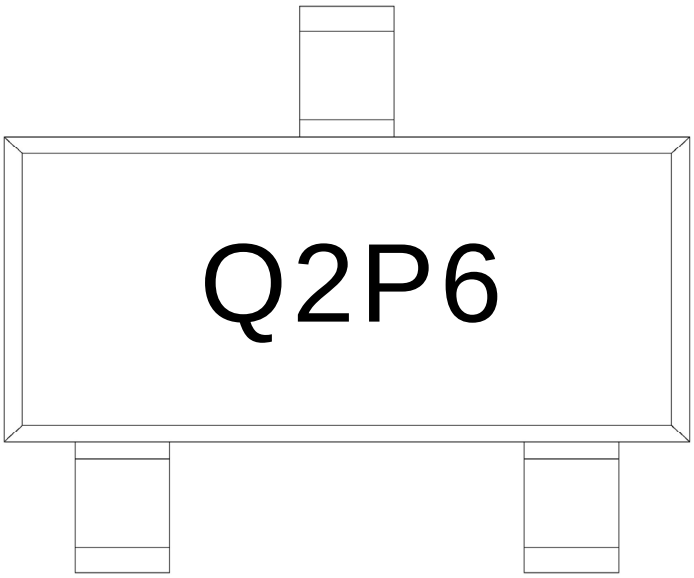
/ Package Dimensions

SOT-23

单位：mm



/ Marking Instructions



Q

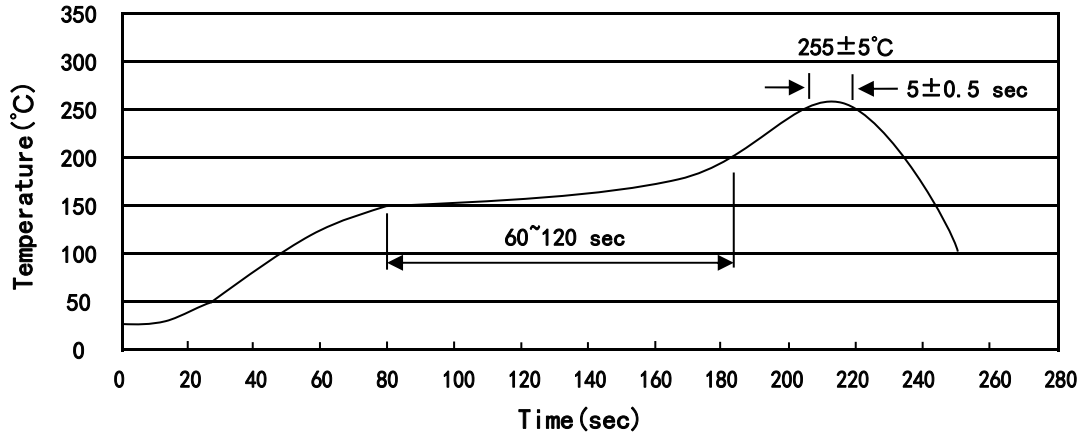
2P6

Note:

Q: Automobile halogen-free product Code

2P6: Product Type Code

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



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.

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ REEL

Package Type 7>û ~ E	Units ;>û ¦H					Dimension ;>û p . (unit ÆEmm³)		
	Units/Reel / --	Reels/Inner Box -- /-	Units/Inner Box /-	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Reel	Inner Box×	Outer Box1ç
SOT-23	3,000	10	30,000	4	120,000	7″ ×8	210×205×205	445×435×230

/ Notices