

Rev.A Apr.-2024

SOT23-6 N

-CHANNEL MOSFET in a SOT23 -6 Plastic Package.

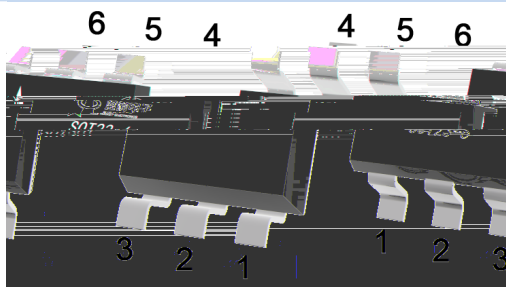
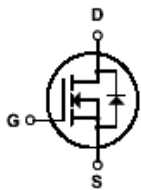
$V_{DS}(V)=60V$ $I_D=3A$

$R_{DS(ON)}@10V<90m\Omega$ (Typ. 70mR)

$R_{DS(ON)}@4.5V<110m\Omega$ (Typ. 85mR)

Qualified to AEC-Q101 Standards for High Reliability, HF Product.

Battery management, High speed switch, low power DC to DC converter, Meet the stringent requirements of automotive applications.



PIN1 D PIN 2 D PIN 3 G PIN 4 S PIN 5 D PIN 6 D

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current – Continuous	I_D	3.0	A
Pulsed Drain Current	I_{DM}	15	A
Power Dissipation	P_D	0.9	W
Storage Temperature Range	T_{stg}	-55 150	
Maximum Junction-to-Ambient	R_{JA}	139	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0$ $I_D=10\mu A$	60	68		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=60V$			1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=10V$ $I_D=3A$		73	90	$m\Omega$
	$R_{DS(on)2}$	$V_{GS}=4.5V$ $I_D=3A$		85	110	$m\Omega$
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_D=1A$		0.75	1.2	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=50\mu A$	1.0	1.4	3.0	V
Maximum Body-Diode Continuous Current	I_S				3	A
Input Capacitance	C_{iss}	$V_{GS}=0V$, $V_{DS}=25V$ $f=1MHz$		415		pF
Output Capacitance	C_{oss}			37		
Reverse Transfer Capacitance	C_{rss}			25		
Gate resistance	R_g	$V_{GS}=0V$, $f=1MHz$ $V_{DS}=0V$		3.4		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$, $V_{DS}=30V$ $I_D=3.0A$		10		nC
Total Gate Charge	$Q_{g(4.5V)}$			5		
Gate Source Charge	Q_{gs}			2		
Gate Drain Charge	Q_{gd}			3		
Turn–On Delay Time	$t_{d(on)}$	$V_{GS}=10V$, $V_{DS}=30V$ $R_L=7\Omega$, $R_{GEN}=3\Omega$		7		ns
Turn–On Rise Time	t_r			12		
Turn–Off Delay Time	$t_{d(off)}$			16		
Turn–Off Fall Time	t_f			11		

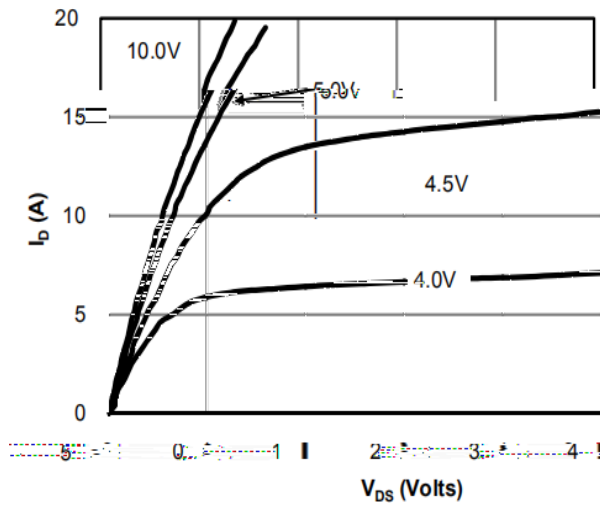


Fig 1: On-Region Characteristics

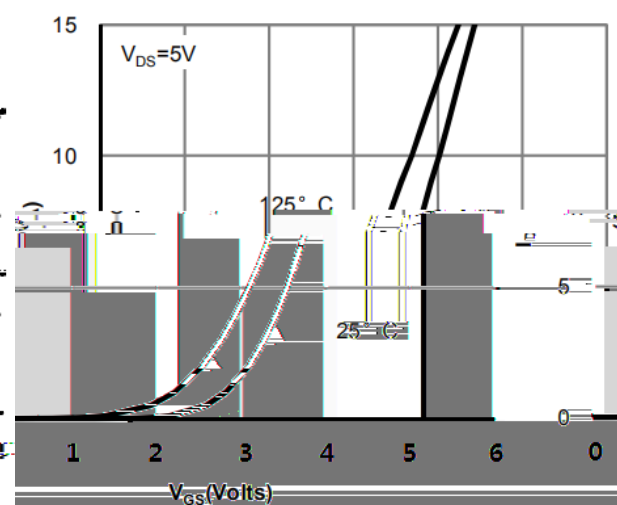


Figure 2: Transfer Characteristics

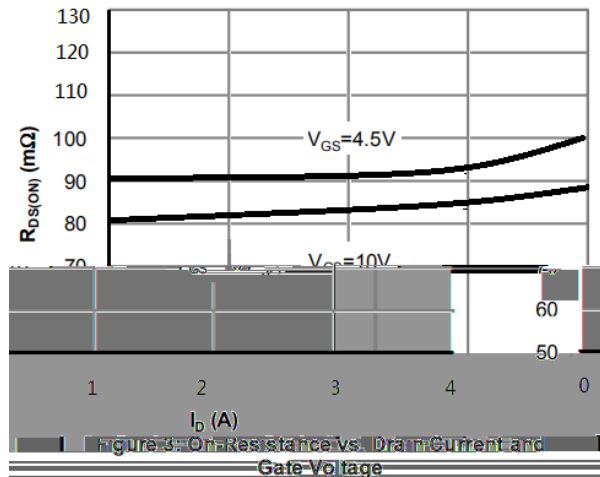


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

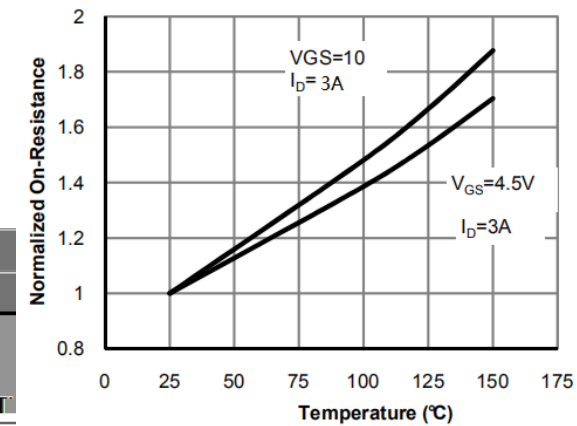


Figure 4: On-Resistance vs. Junction Temperature

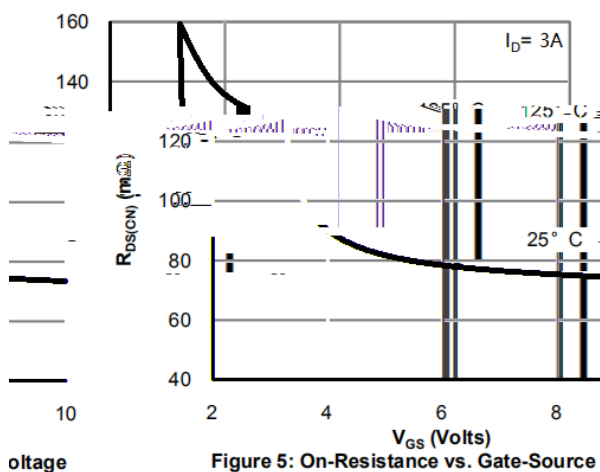


Figure 5: On-Resistance vs. Gate-Source Voltage

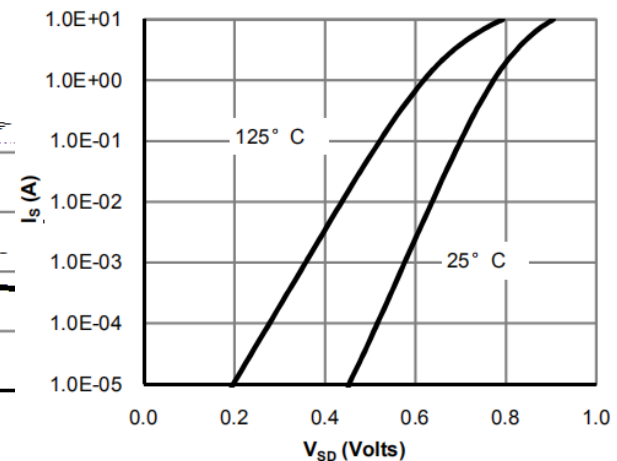


Figure 6: Body-Diode Characteristics

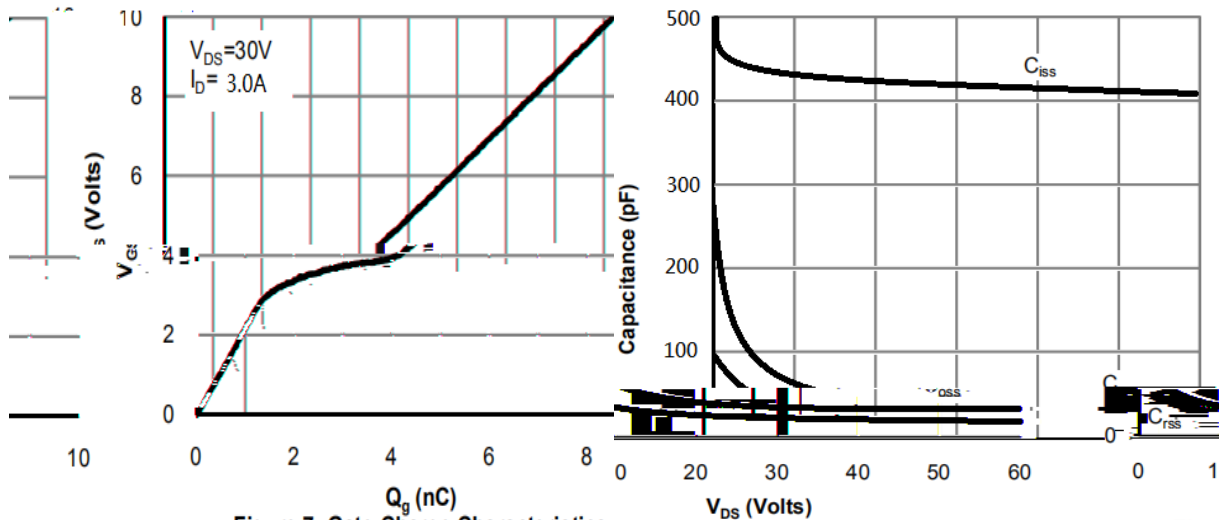


Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

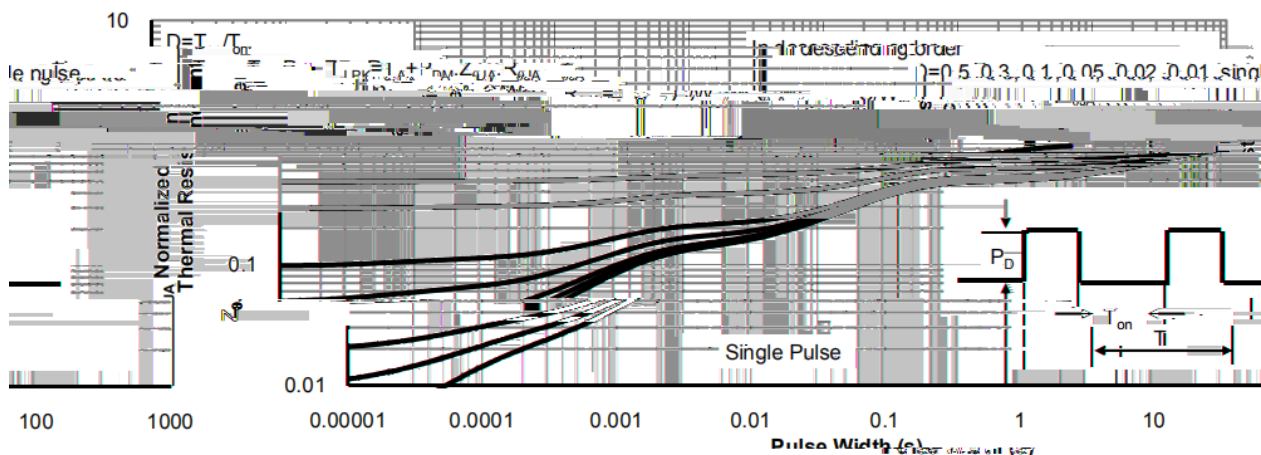
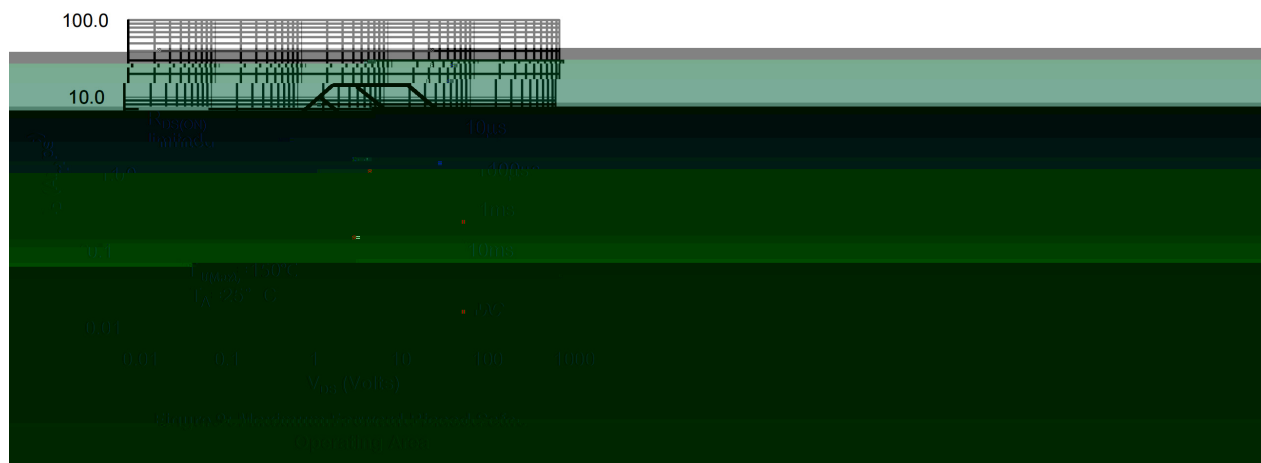
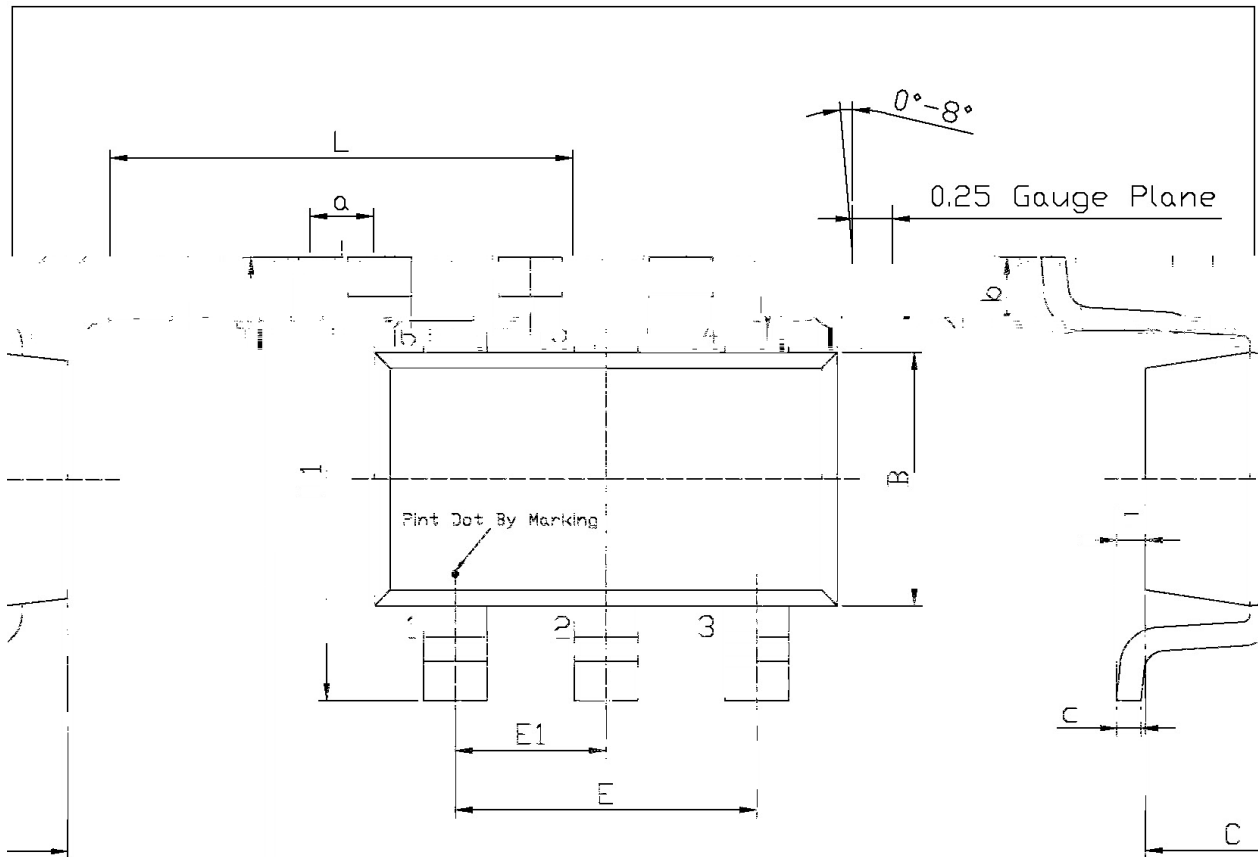


Figure 10 Normalized Maximum Transient Thermal Impedance



Unit: mm

Dimensions

Unit

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.32	E1	0.85	1.05
B	1.50	1.70	a	0.35	0.50
C	0.90	1.30	c	0.10	0.20
L1	2.60	3.00	b	0.35	0.55
E	1.80	2.00	F	0	0.15

SOT23-6



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.

260 5

10 1 sec.

Temp.:260±5

Time:10±1 sec

/ REEL

Package Type	Units	Dimension	(unit mm ³)
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