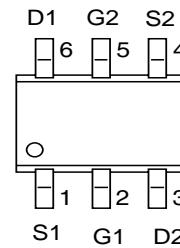
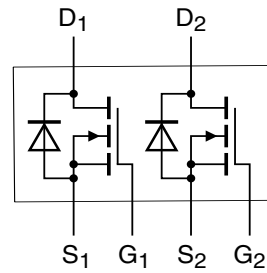


**Features**

- $V_{DS} (V) = 60V$
- $R_{DS(ON)} < 2 \Omega$  ( $V_{GS} = 10V$ )
- $R_{DS(ON)} < 2.2\Omega$  ( $V_{GS} = 4.5V$ )

**Application**

- Notebook
- Load Switch
- Networking
- Hand-held Instruments



**Absolute Maximum Ratings**  $T_A = 25^\circ C$  unless otherwise noted

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{OS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current ( $T_c = 150^\circ C$ )	$I_D$	$T_A = 25^\circ C$	0.3
		$T_A = 100^\circ C$	0.19
Drain Current-Pulsed	$I_{DM}$	0.8	A
Maximum Power Dissipation	$P_D$	0.35	W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55To150	$^\circ C$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	350	$^\circ C/W$

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 1$	$\mu A$
		$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 10$	$\mu A$
<b>On Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.6		
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.3A$			2	$\Omega$
		$V_{GS}=4.5V, I_D=0.2A$			2.2	$\Omega$
Forward Transconductance	$g_{FS}$	$V_{GS}=10V, I_D=0.2A$	0.1			S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=30V, V_{GS}=0V,$ $F=1.0MHz$		27		PF
Output Capacitance	$C_{oss}$			18		PF
Reverse Transfer Capacitance	$C_{rss}$			2		PF
<b>Switching Characteristics</b>						
Turn-on Delay Time	$t_{D(on)}$	$V_{DD}=30V, I_D=0.2A$ $V_{GS}=10V, R_{GEN}=10\Omega$		10		nS
Turn-on Rise Time	$t_r$			50		nS
Turn-Off Delay Time	$t_{D(off)}$			17		nS
Turn-Off Fall Time	$t_f$			10		nS
Total Gate Charge	$Q_g$			1.7	3	nC
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=0.2A$			1.2	V
Diode Forward Current	$I_S$				0.3	A

Typical Electrical Characteristics

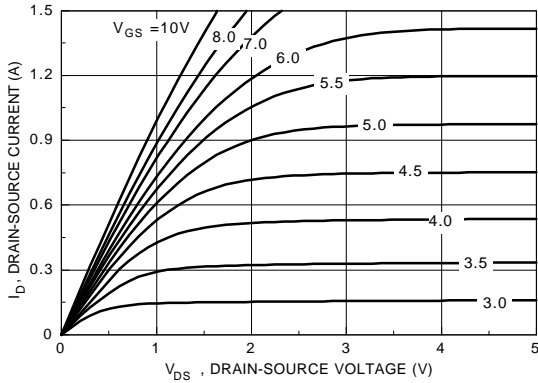


Figure 1. On-Region Characteristics.

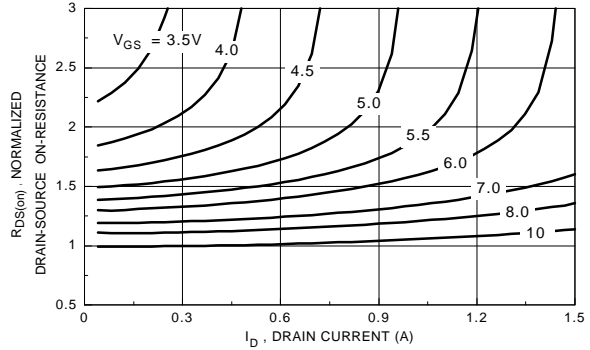


Figure 2. On-Resistance Variation with Gate Voltage and Drain Current.

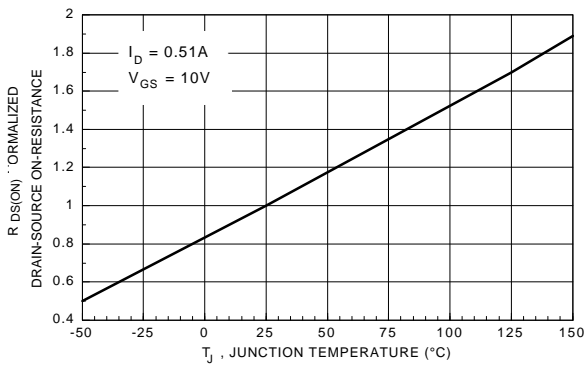


Figure 3. On-Resistance Variation with Temperature.

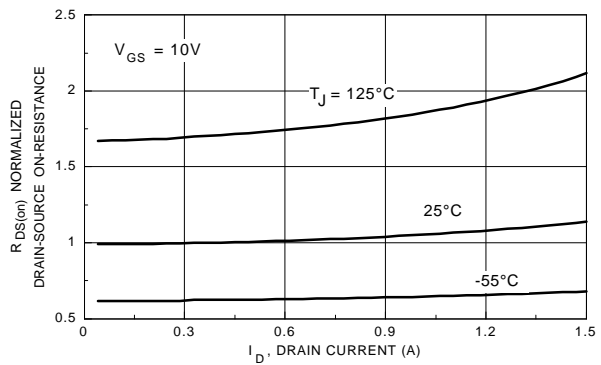


Figure 4. On-Resistance Variation with Drain Current and Temperature.

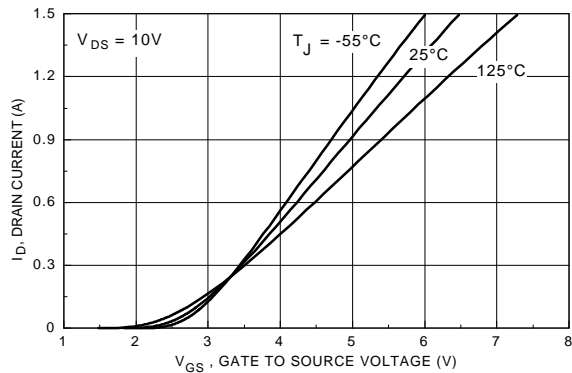


Figure 5. Transfer Characteristics.

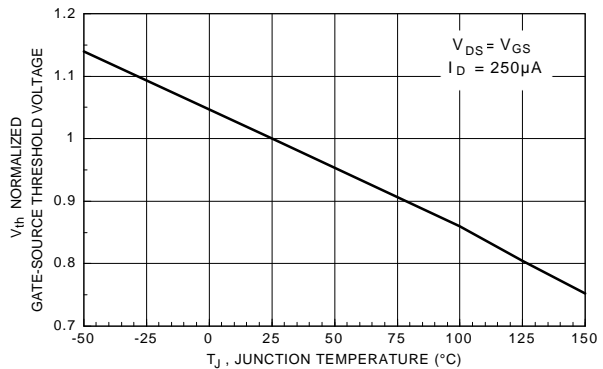


Figure 6. Gate Threshold Variation with Temperature.

Typical Electrical Characteristics (continued)

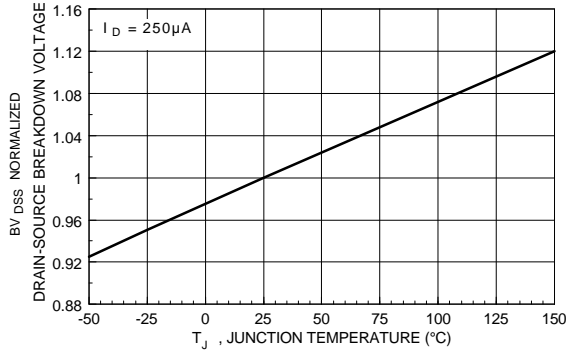


Figure 7. Breakdown Voltage Variation with Temperature.

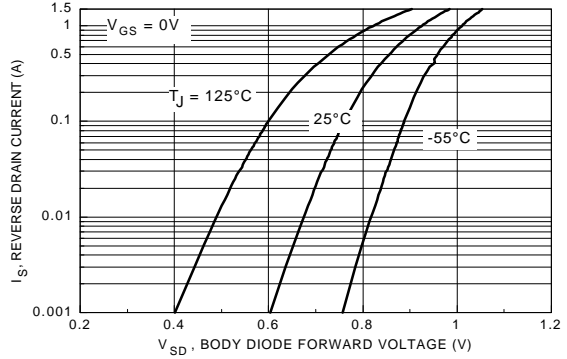


Figure 8. Body Diode Forward Voltage Variation with Current and Temperature.

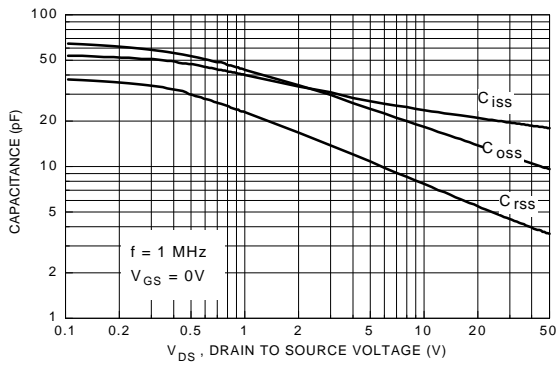


Figure 9. Capacitance Characteristics.

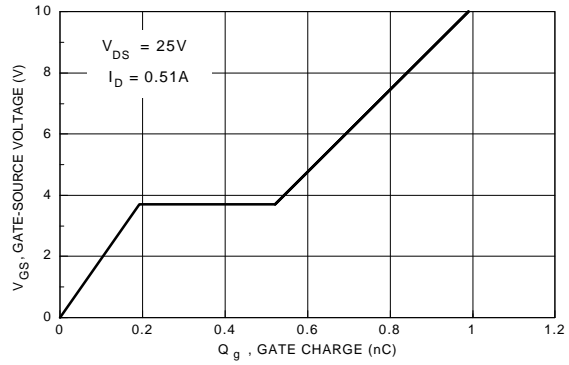


Figure 10. Gate Charge Characteristics.

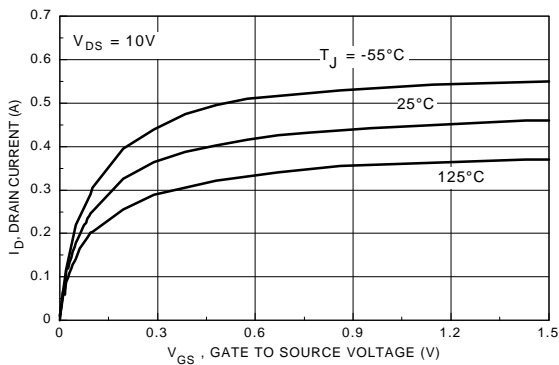


Figure 11. Transconductance Variation with Drain Current and Temperature.

Typical Thermal Characteristics

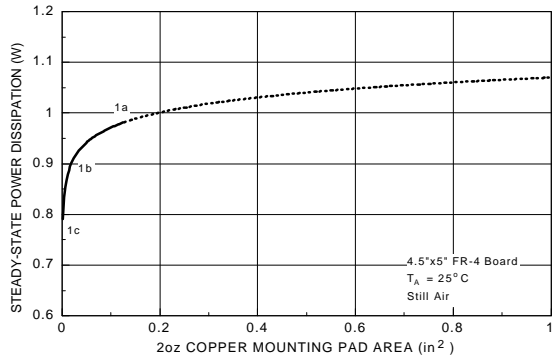


Figure 12. SOT23-6 Dual Package Maximum Steady-State Power Dissipation versus Copper Mounting Pad Area.

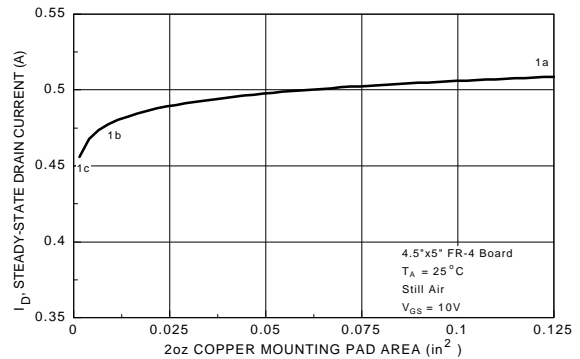


Figure 13. Maximum Steady-State Drain Current versus Copper Mounting Pad Area.

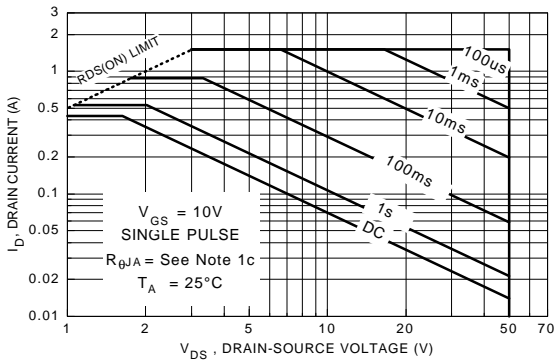
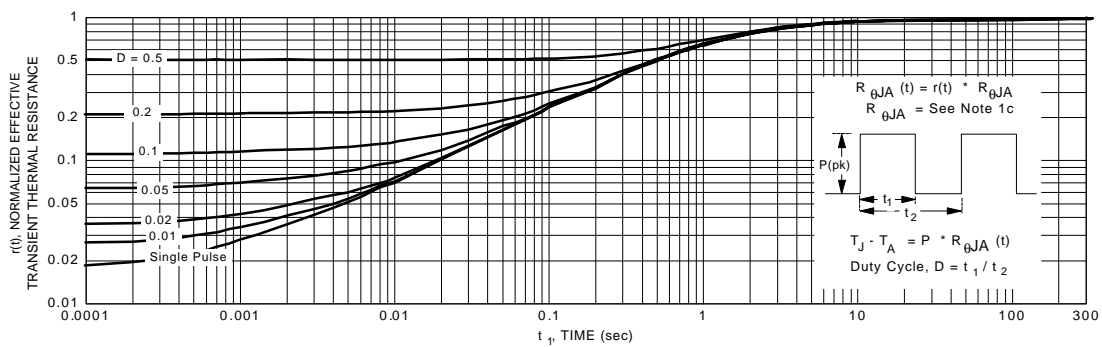
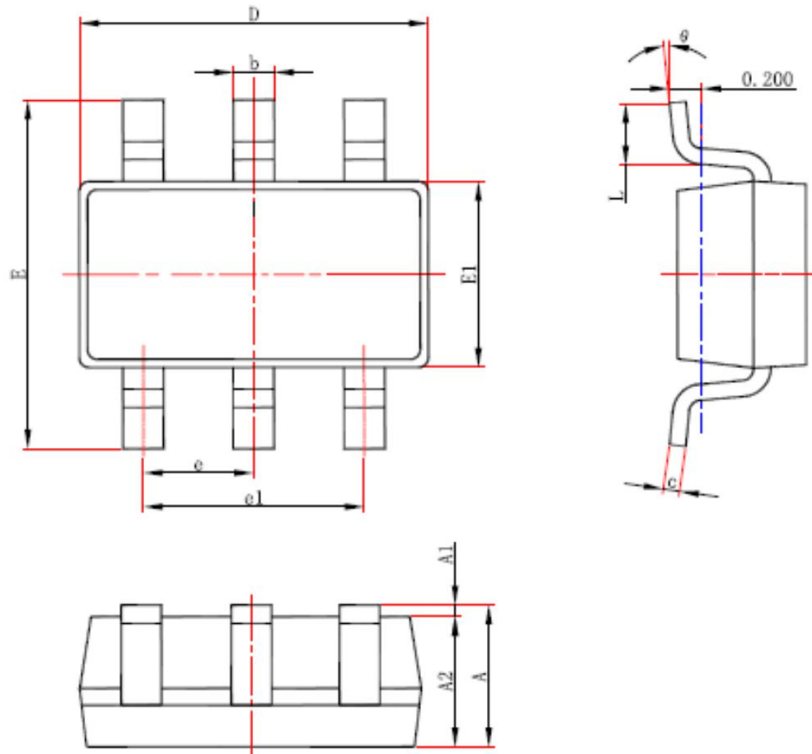


Figure 14. Maximum Safe Operating Area.

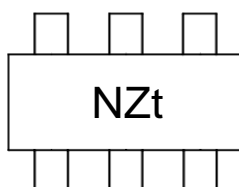


SOT23-6



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
$\theta$	0°	8°	0°	8°

## Marking



## Ordering information

Order code	Package	Baseqty	Deliverymode
UMW BSS138PS	SOT23-6	3000	Tape and reel