

1.Features

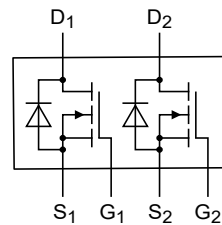
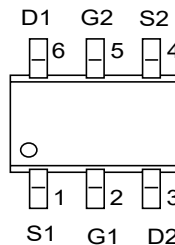
- $V_{DS(V)}=60V$
- $R_{DS(ON)}<2\Omega(V_{GS}=10V)$
- $R_{DS(ON)}<2.2\Omega(V_{GS}=4.5V)$

2.Application

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

2.Pinning information

Pin	Symbol	Description
1,4	S	SOURCE
2,5	G	GATE
3,6	D	DRAIN



3.Absolute Maximum Ratings $T_A = 25^\circ C$

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



4. Electrical Characteristic ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Off Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.6	2	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =0.3A			2	Ω
		V _{GS} =4.5V, I _D =0.2A			2.2	Ω
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =0.2A	0.1			S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHz		27		pF
Output Capacitance	C _{oss}			18		pF
Reverse Transfer Capacitance	C _{rss}			2		pF
Switching Characteristics						
Turn-on Delay Time	t _{D(on)}	V _{DS} =30V, I _D =0.2A V _{GS} =10V, R _{GEN} =10Ω		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
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =0.2A			1.2	V
Diode Forward Current	I _S				0.3	A



5.1 Typical characteristic

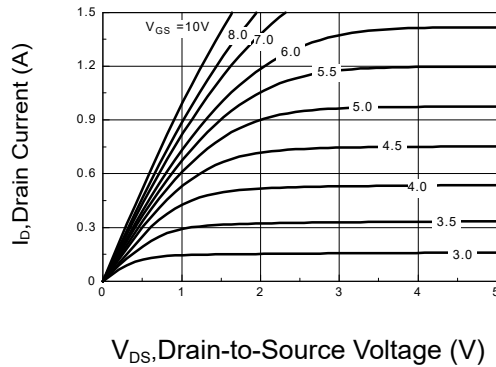


Figure 1: Output Characteristics

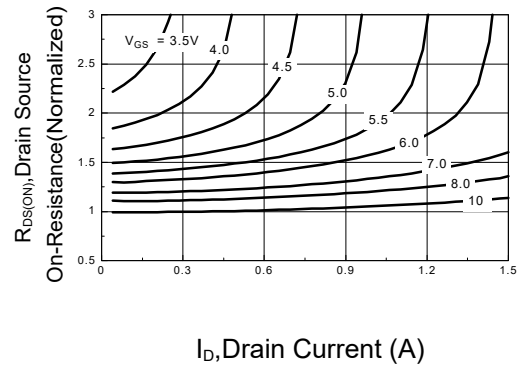


Figure 2: On-Resistance Variation with Gate Voltage and Drain Current

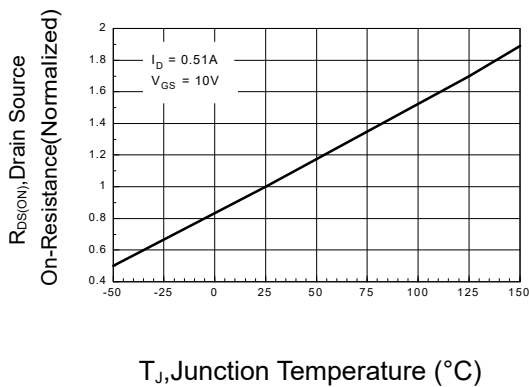


Figure 3: On-Resistance Variation with Temperature

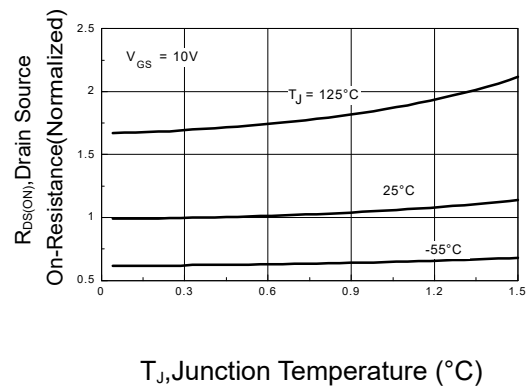


Figure 4: On-Resistance Variation with Drain Current and Temperature

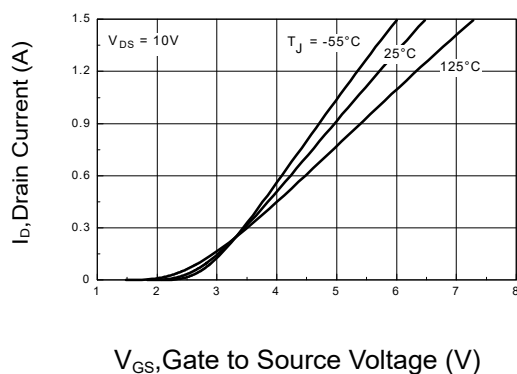


Figure 5: Transfer Characteristics

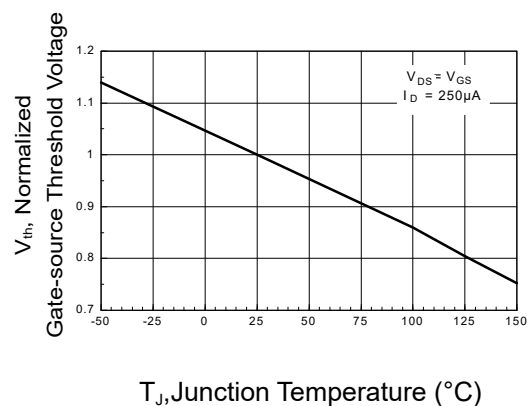
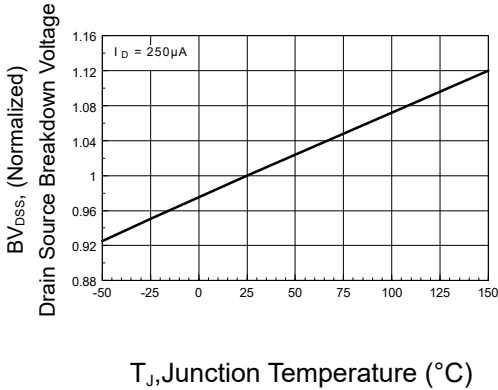
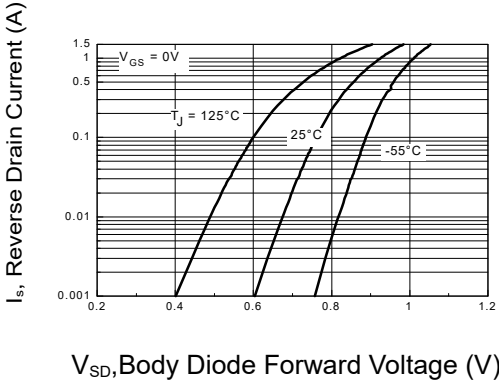
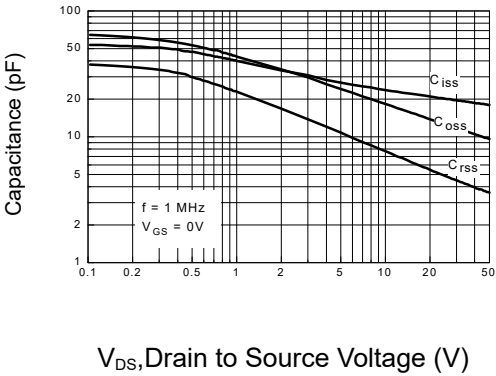
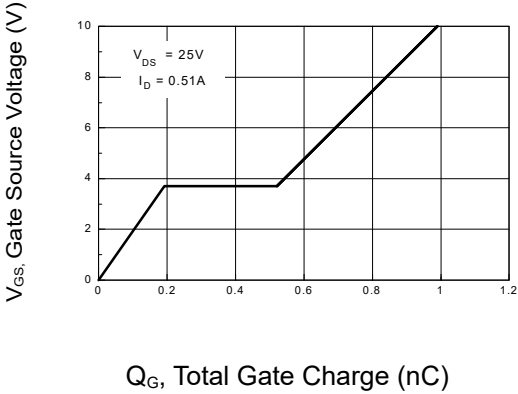
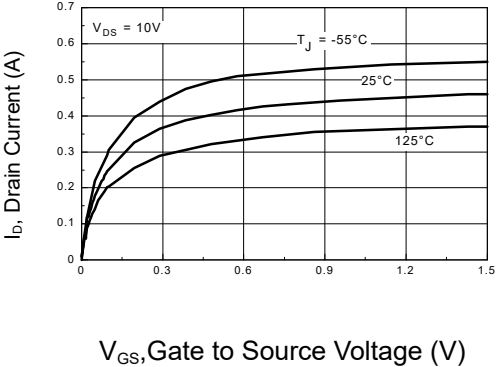
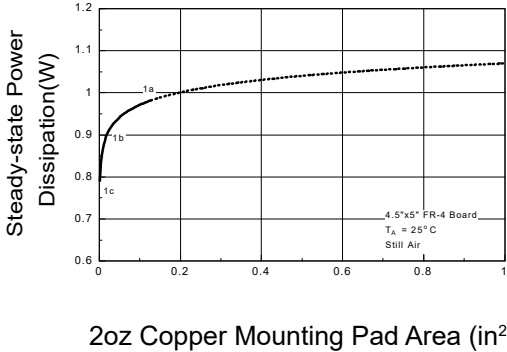


Figure 6: Gate Threshold Variation with Temperature

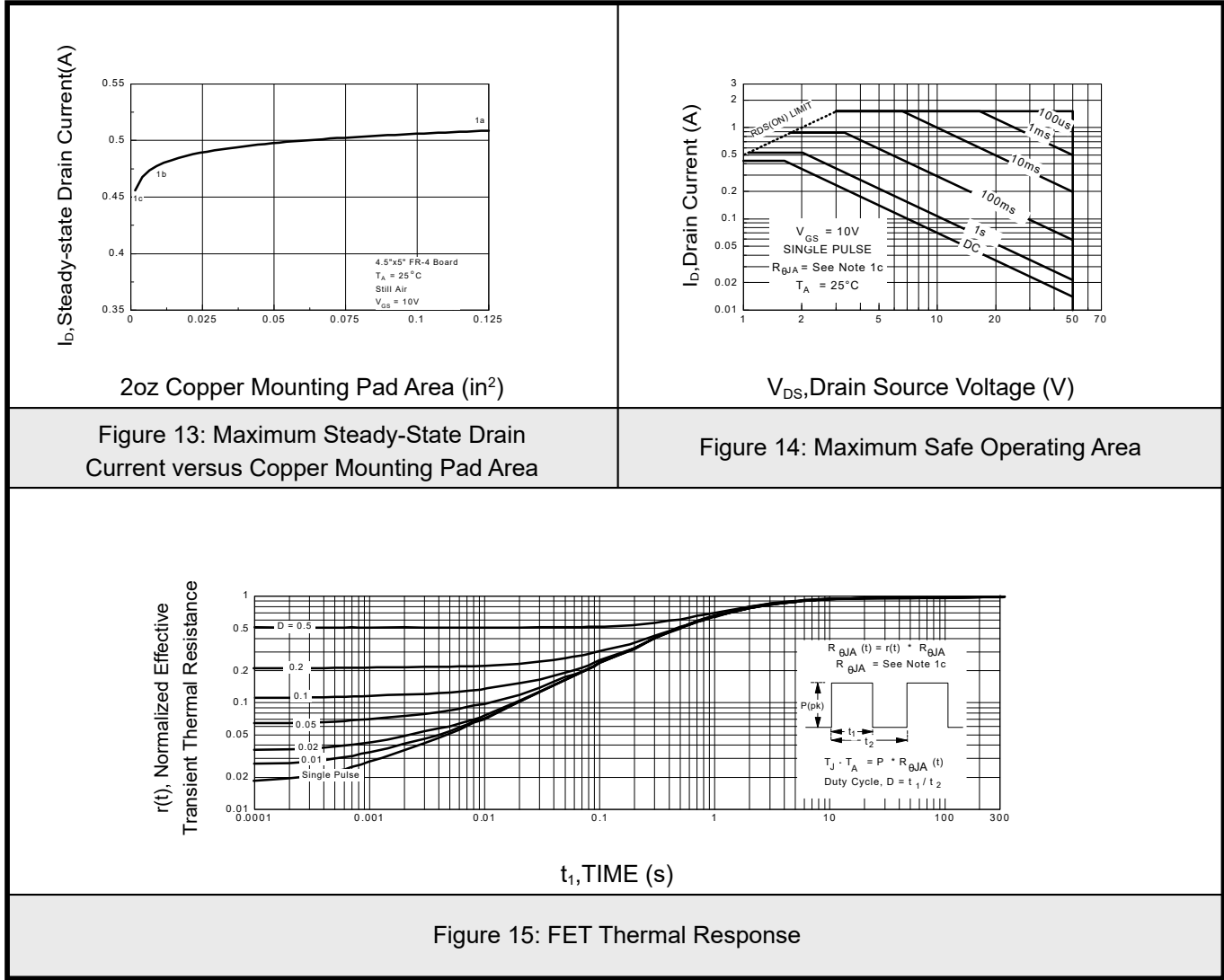


5.2Typical characteristic

 BV_{DSS}, (Normalized) Drain Source Breakdown Voltage T_J, Junction Temperature ($^{\circ}C$)	 I_S, Reverse Drain Current (A) V_{SD}, Body Diode Forward Voltage (V)
Figure 7: Breakdown Voltage Variation with Temperature	Figure 8: Body Diode Forward Voltage Variation with Current and Temperature
 Capacitance (pF) V_{DS}, Drain to Source Voltage (V)	 V_{GS}, Gate Source Voltage (V) Q_G, Total Gate Charge (nC)
Figure 9: Capacitance Characteristics	Figure 10: Gate Charge Characteristics
 I_D, Drain Current (A) V_{GS}, Gate to Source Voltage (V)	 Steady-state Power Dissipation(W) 2oz Copper Mounting Pad Area (in²)
Figure 11: Transconductance Variation with Drain Current and Temperature	Figure 12: SOT23-6 Dual Package Maximum

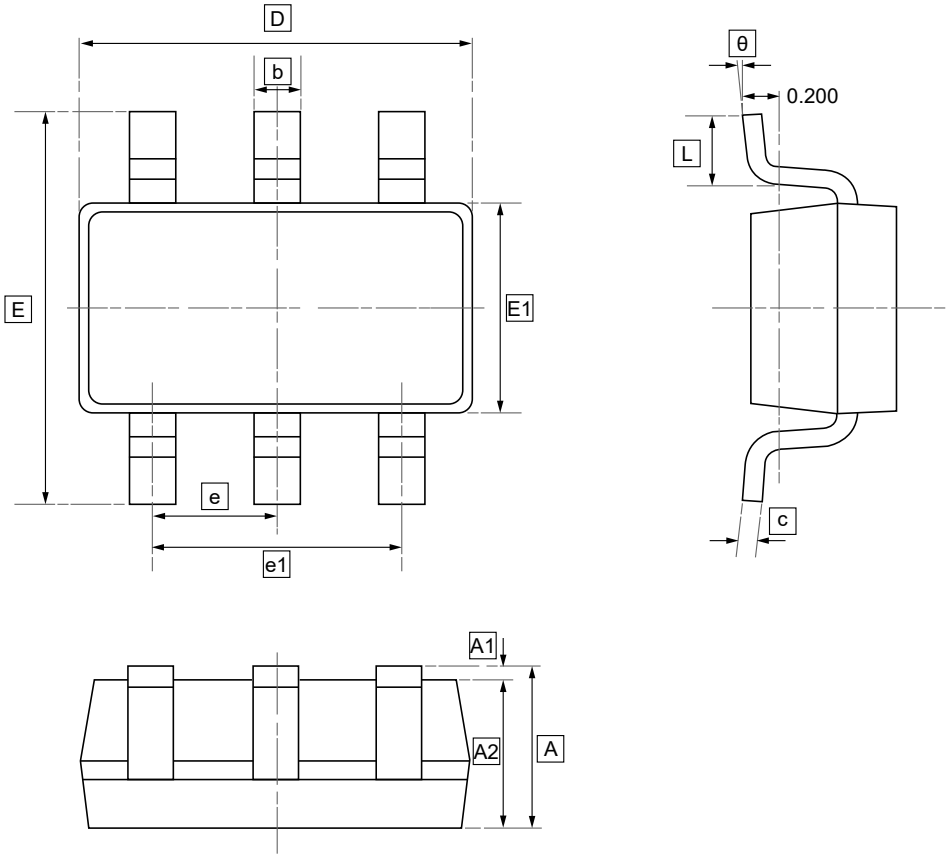


5.2Typical characteristic





6.SOT23-6 Package Outline Dimensions

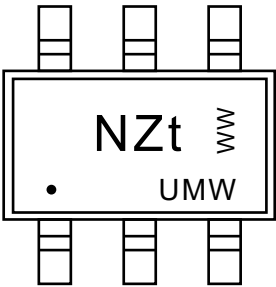


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E1	E	e	e1	L	θ
Min	1.050	0.000	1.050	0.300	0.100	2.820	1.500	2.650	0.950	1.800	0.300	0°
Max	1.250	0.100	1.150	0.500	0.200	3.020	1.700	2.950	BSC	2.000	0.600	8°



7.Ordering information



ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW BSS138PS	SOT23-6	3000	Tape and reel



8.Disclaimer

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