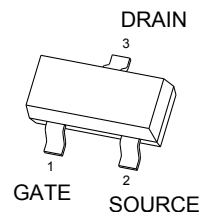
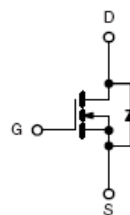




MT2328 N-Channel 100-V (D-S) MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
100	0.300 @ $V_{GS} = 10$ V	1.5



General FEATURE

TrenchFET Power MOSFET
Lead free product is acquired
Surface mount package

APPLICATION

Load Switch for Portable Devices
DC/DC Converter

SOT-23

MARKING D82

ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED)					
Parameter		Symbol	5 sec	Steady State	Unit
Drain-Source Voltage		V _{DS}	100		V
Gate-Source Voltage		V _{GS}	± 20		
Continuous Drain Current (T _J = 150 °C) ^a	T _A = 25 °C	I _D	1.5	1.15	A
Pulsed Drain Current ^b		I _{DM}	6		
Avalanche Current ^b	L = 0.1 mH	I _{AS}	6		
Single Avalanche Energy		E _{AS}	1.8		mJ
Continuous Source Current (Diode Conduction) ^a		I _S	0.6		A
Power Dissipation ^a	T _A = 25 °C	P _D	1.25	0.73	W
Operating Junction and Storage Temperature Range		T _J , T _{stg}	–55 to 150		°C

THERMAL RESISTANCE RATINGS					
Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient ^a	$t \leq 5$ sec	R_{thJA}	80	100	$^\circ\text{C/W}$
	Steady State		130	170	
Maximum Junction-to-Foot	Steady State	R_{thJF}	45	55	

Notes

- a. Surface Mounted on 1" x 1" FR4 Board.
b. Pulse width limited by maximum junction temperature



SPECIFICATIONS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

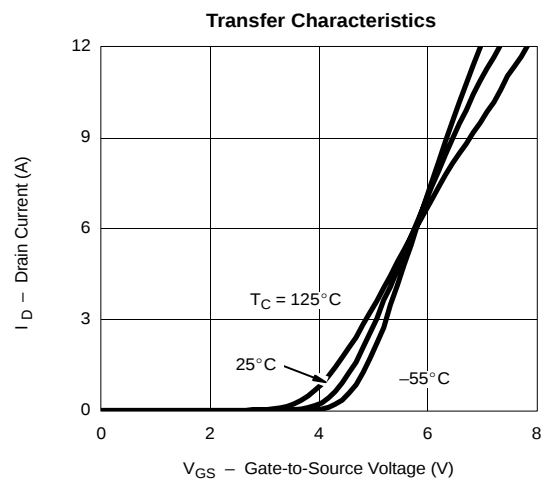
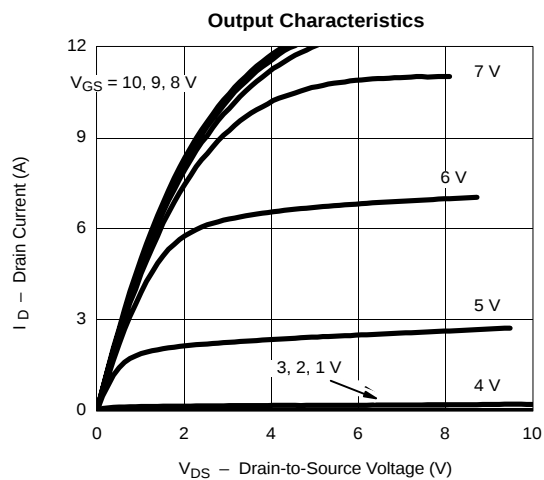
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	100			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	1.3		2.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 80\text{ V}, V_{GS} = 0\text{ V}$			200	nA
On-State Drain Current ^a	$I_{D(on)}$	$V_{DS} \geq 15\text{ V}, V_{GS} = 10\text{ V}$	6			A
Drain-Source On-Resistance ^a	$r_{DS(on)}$	$V_{GS} = 10\text{ V}, I_D = 1.5\text{ A}$		0.250	0.300	Ω
Forward Transconductance ^a	g_{fs}	$V_{DS} = 15\text{ V}, I_D = 1.5\text{ A}$		4		S
Diode Forward Voltage	V_{SD}	$I_S = 1.0\text{ A}, V_{GS} = 0\text{ V}$		0.8	1.2	V
Dynamic ^b						
Total Gate Charge	Q_g	$V_{DS} = 50\text{ V}, V_{GS} = 10\text{ V}, I_D = 1.5\text{ A}$		3.3	4.0	nC
Gate-Source Charge	Q_{gs}			0.47		
Gate-Drain Charge	Q_{gd}			1.45		
Switching						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 50\text{ V}, R_L = 33\text{ }\Omega$ $I_D \cong 0.2\text{ A}, V_{GEN} = 10\text{ V}, R_G = 6\text{ }\Omega$		7	11	ns
Rise Time	t_r			11	17	
Turn-Off Delay Time	$t_{d(off)}$			9	15	
Fall-Time	t_f			10	15	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = 1.5\text{ A}, di/dt = 100\text{ A}/\mu\text{s}$		50	100	ns

Notes

a. Pulse test: $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.

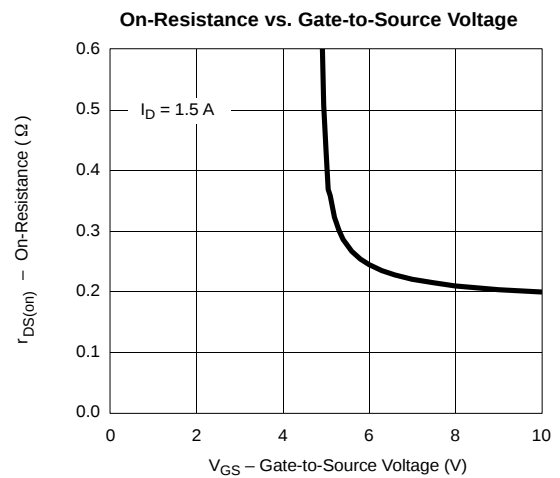
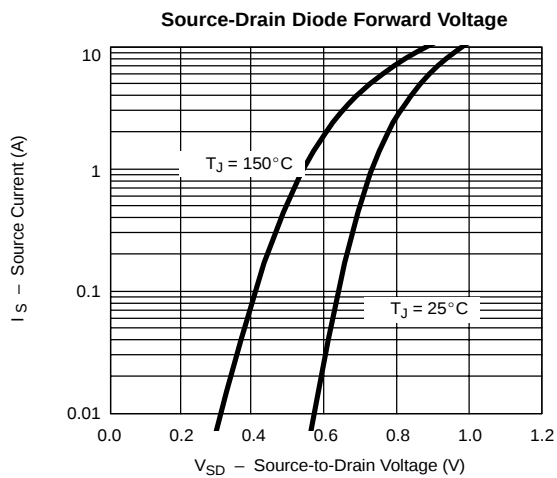
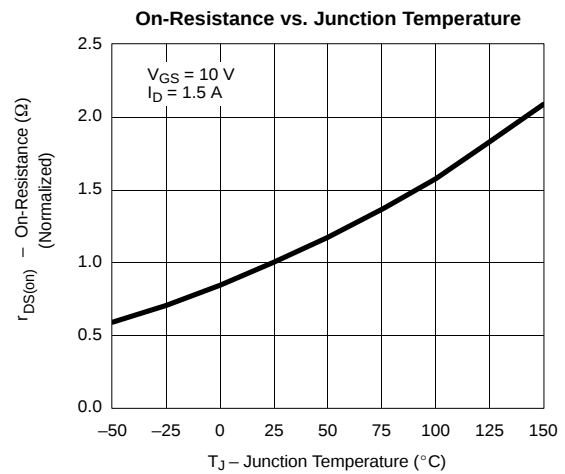
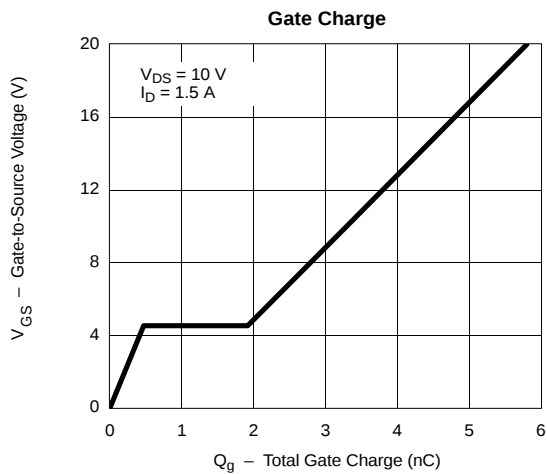
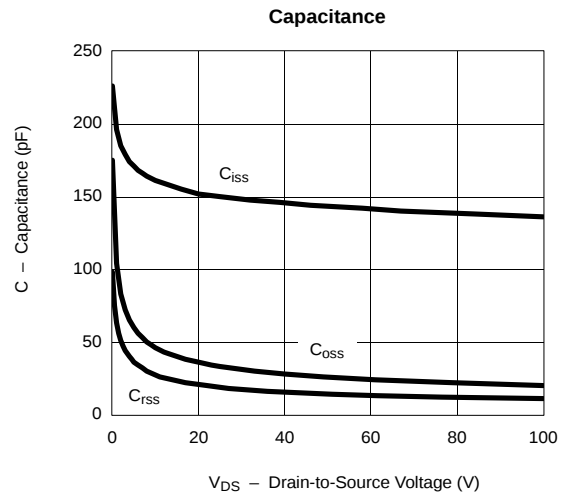
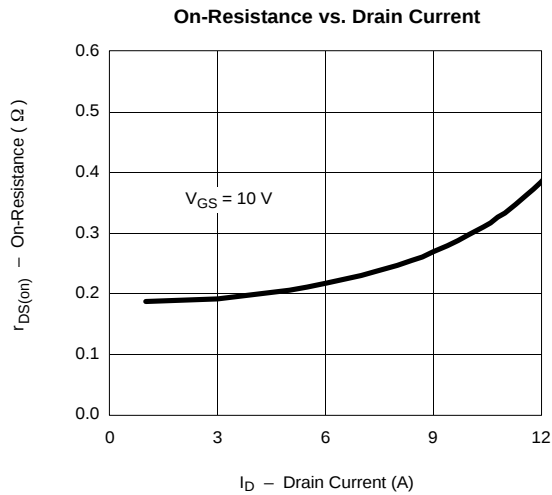
b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



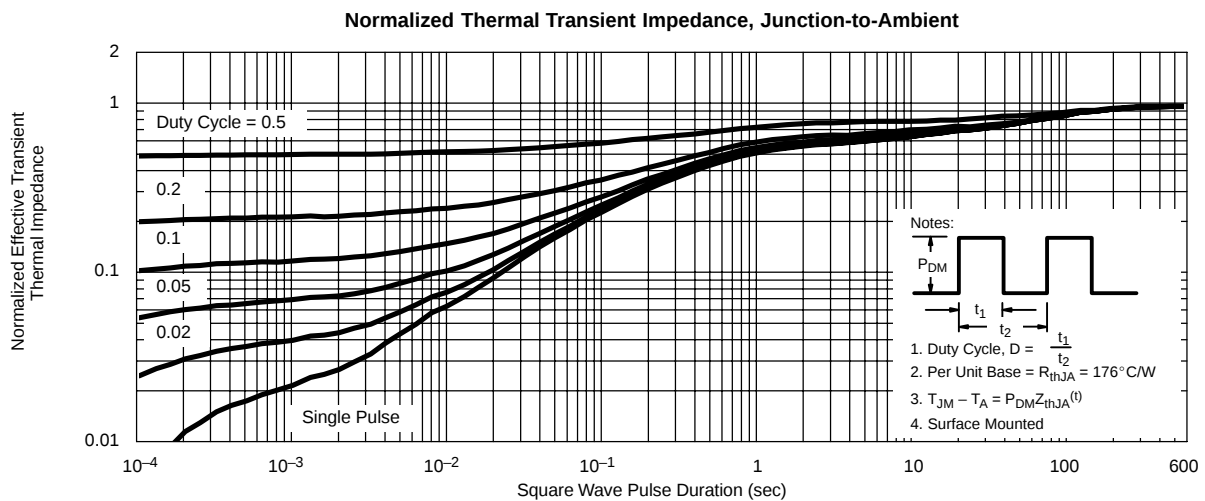
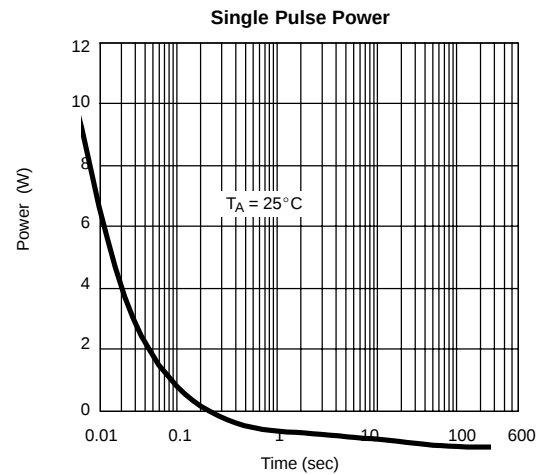
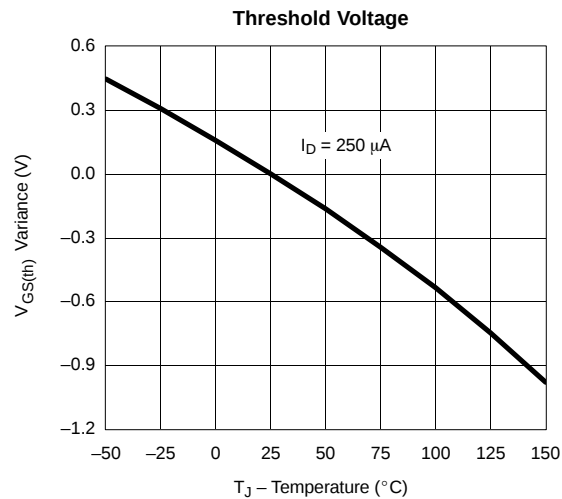


TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

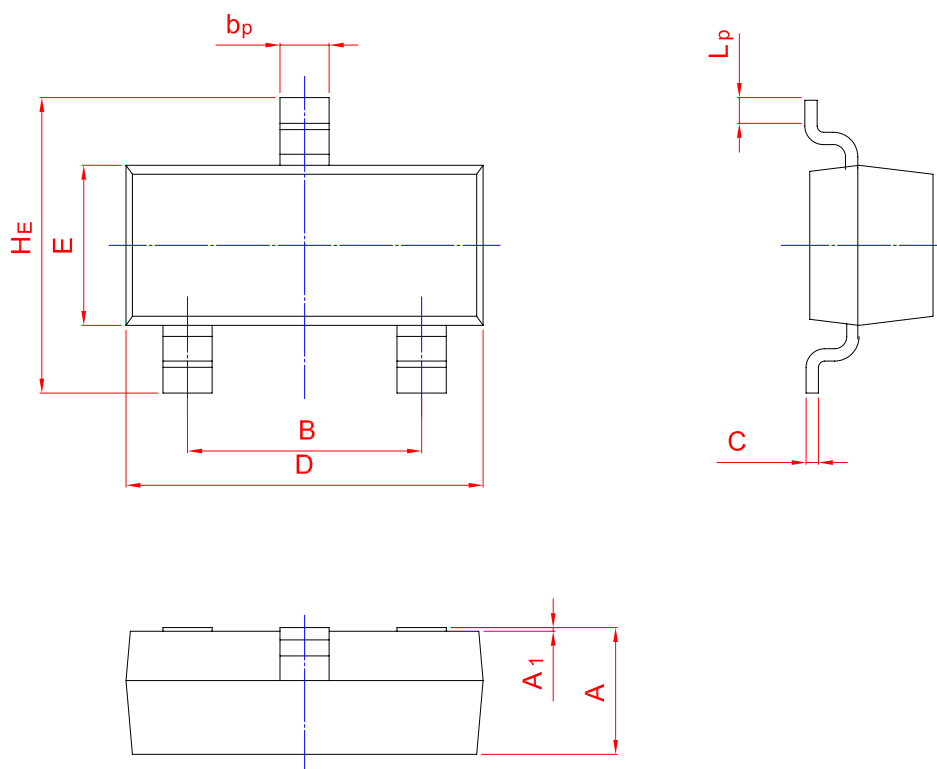
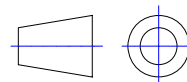




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20