

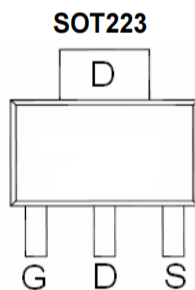
GENERAL FEATURES

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-240V	7.7Ω@-10V	-0.27A

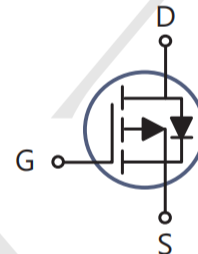
Application

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

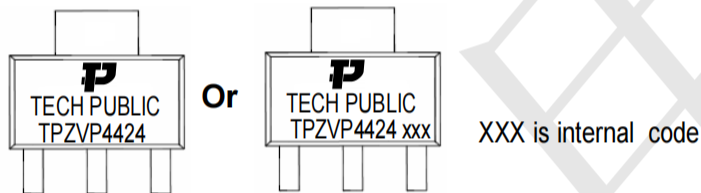
Package and Pin Configuration



Circuit diagram



Marking:



ABSOLUTE MAXIMUM RATINGS ($T_C=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Limit	Units
Drain-Source Voltage		V _{DS}	-240	V
Gate-Source Voltage		V _{GS}	±20	V
Drain Current-Continuous (Note 2)	T _A =25°C	I _D	-0.27	A
	T _A =70°C		-0.25	A
-Pulsed (Note 1、Note 2)		I _{DM}	-1.1	A
Single Pulse Avalanche Energy (Note 3)		E _{AS}	10	mJ
Maximum Power Dissipation	T _A =25°C		1.8	W
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	160	$^\circ\text{C/W}$
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ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-240			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-200V, V _{GS} =0V			-1	uA
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 =-250uA	- 1	- 1.5	- 3	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-0.1A		7.7	9.6	ohm
		V _{GS} =-4.5V, I _D =-0.1A		8	10	ohm
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =-0.1A		1.5		S

DYNAMIC CHARACTERISTICS (Note 4)

Input Capacitance	C _{ISS}	V _{DS} =-100V, V _{GS} =0 V f=1.0MHz		229		pF
Output Capacitance	C _{OSS}			16.7		pF
Reverse Transfer Capacitance	C _{RSS}			8.8		pF
Total Gate Charge	Q _g	V _{DS} =-100V, I _D =-0.3A, V _{GS} =-10V		4.1		nC
Gate-Source Charge	Q _{gs}	V _{DS} =-100V, I _D =-0.1A, V _{GS} =-10V		0.7		nC
Gate-Drain Charge	Q _{gd}			0.8		nC

SWITCHING CHARACTERISTICS (Note 4)

Turn-On Delay Time	t _{D(ON)}	V _{DD} =-100V I _D =-0.1A V _{GS} =-10V R _{GEN} = 6 ohm		0.9		ns
Rise Time	t _r			0.7		ns
Turn-Off Delay Time	t _{D(OFF)}			9.9		ns
Fall Time	t _f			4.7		ns

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS

Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-1A		-0.85	-1.3	V
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Typical Electrical and Thermal Characteristics

Figure 1. Output Characteristics

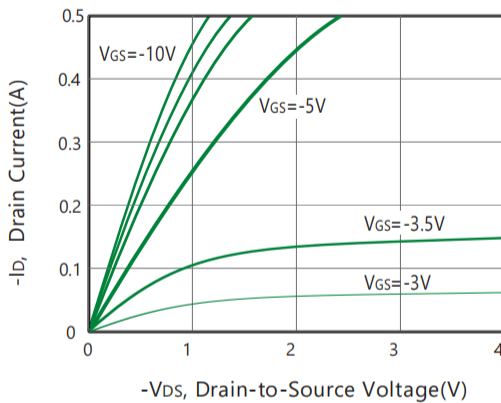


Figure 2. Body Diode Forward Voltage Variation with Source Current

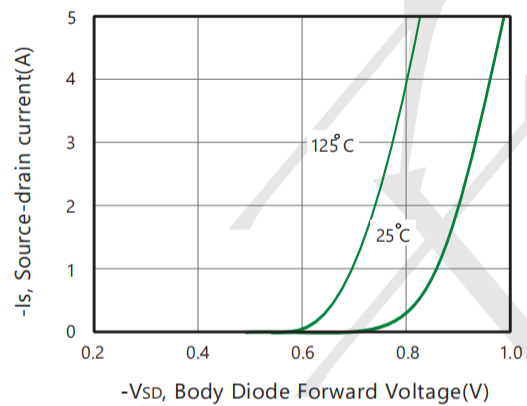


Figure 3. On-Resistance vs. Gate-Source Voltage

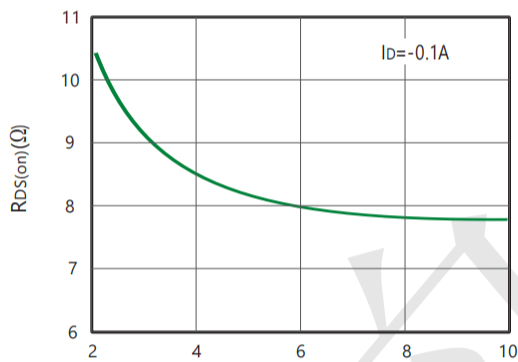


Figure 4. On-Resistance Variation with Drain Current and Temperature

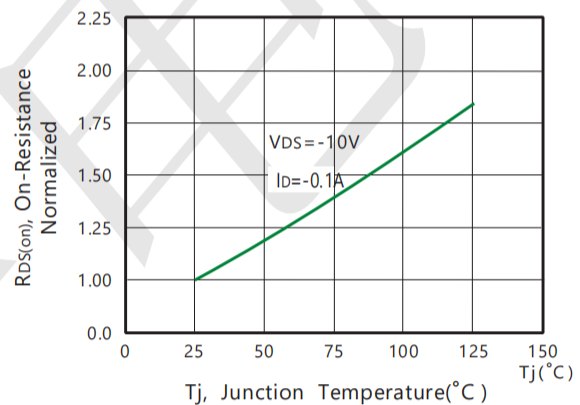


Figure 5. Gate Threshold Variation with Temperature

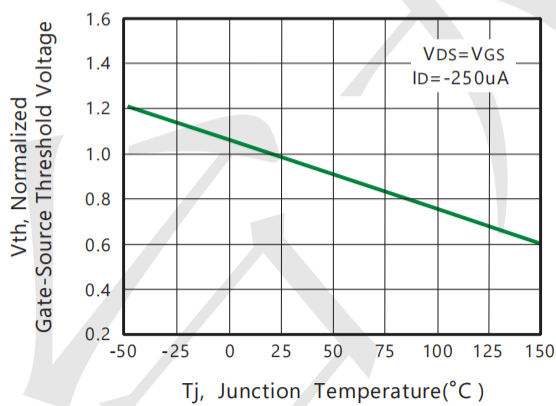


Figure 6. Gate Charge

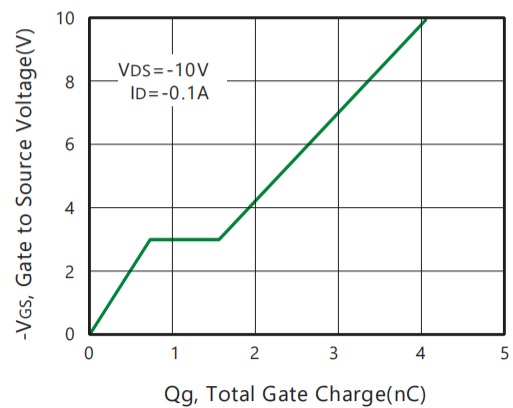


Figure 7. Capacitance

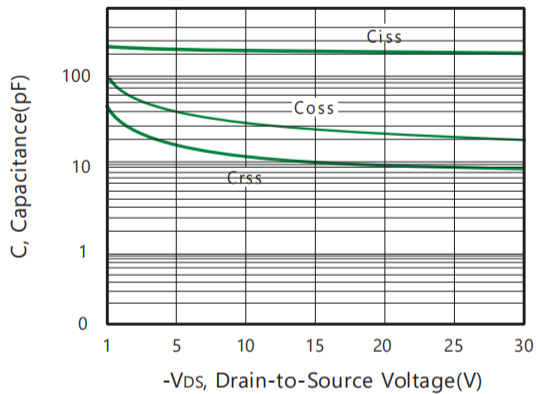


Figure 8. Maximum Safe Operating Area

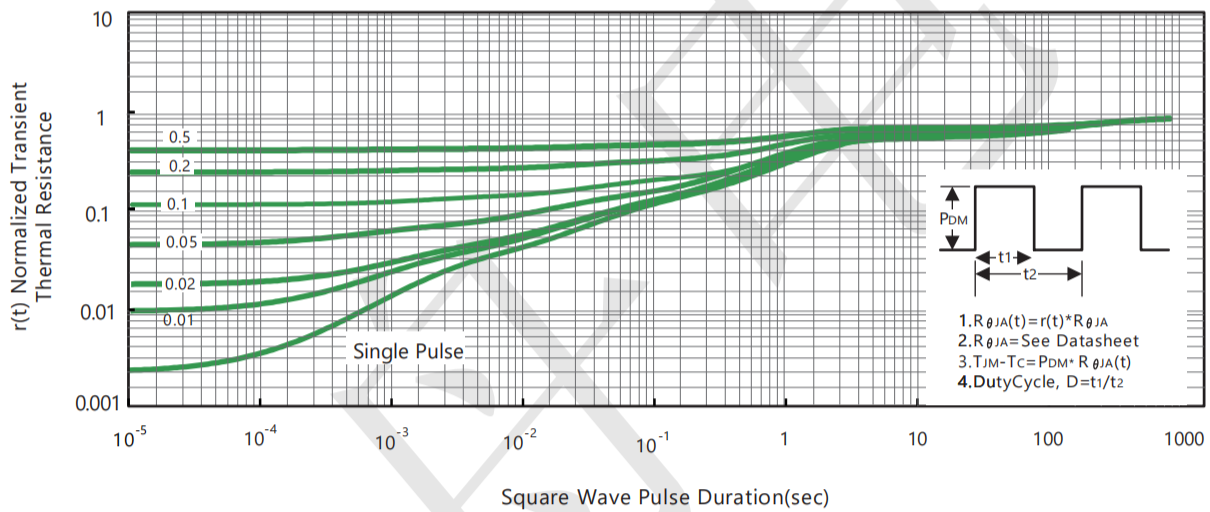
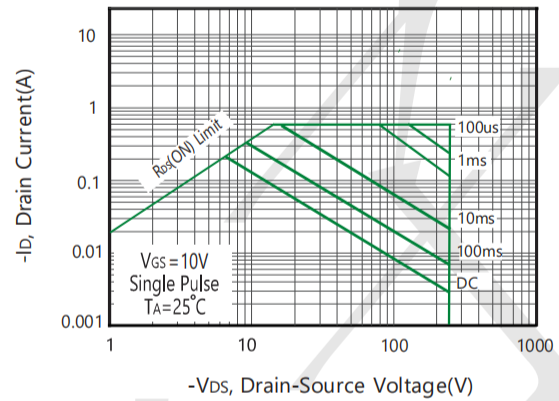


Figure 9. Normalized Thermal Transient Impedance Curve

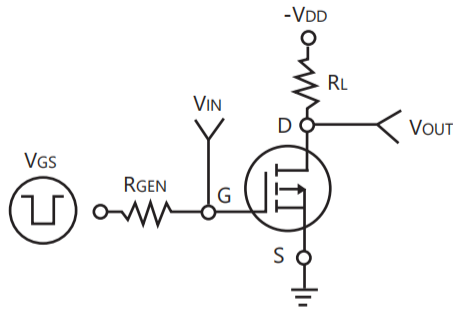


Figure 10a. Switching Test Circuit

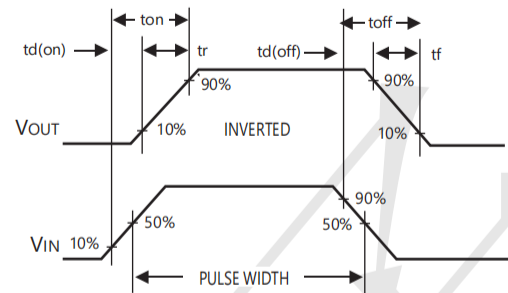
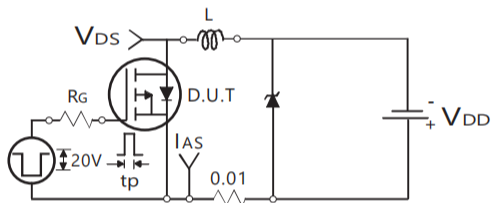
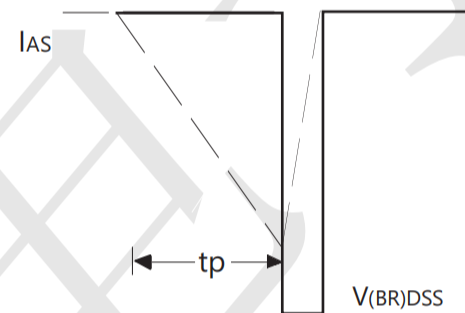


Figure 10b. Switching Waveforms



Unclamped Inductive Test Circuit

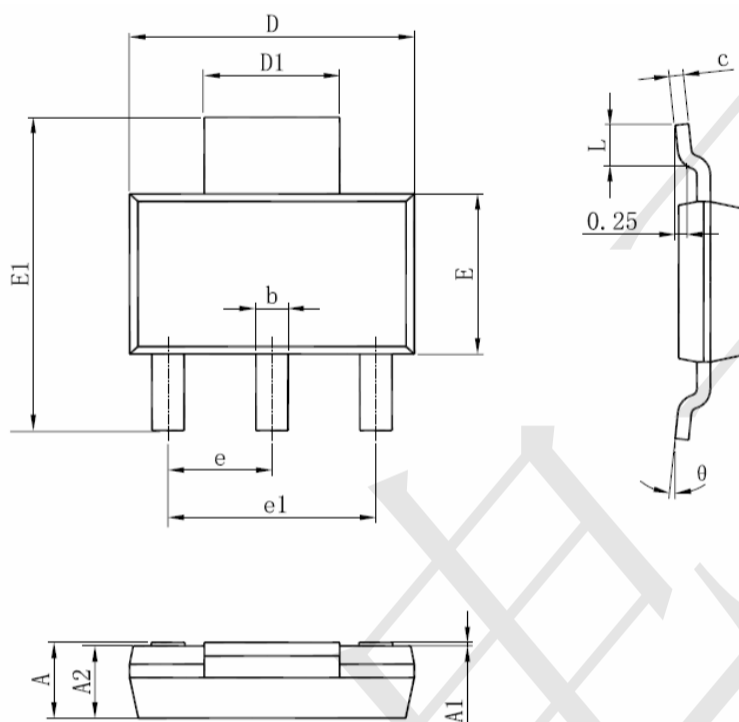
Figure 11a.



Unclamped Inductive Waveforms

Figure 11b.

SOT-223 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.520	1.800	0.060	0.071
A1	0.000	0.100	0.000	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.820	0.026	0.032
c	0.250	0.350	0.010	0.014
D	6.200	6.400	0.244	0.252
D1	2.900	3.100	0.114	0.122
E	3.300	3.700	0.130	0.146
E1	6.830	7.070	0.269	0.278
e	2.300(BSC)		0.091(BSC)	
e1	4.500	4.700	0.177	0.185
L	0.900	1.150	0.035	0.045
θ	0°	10°	0°	10°