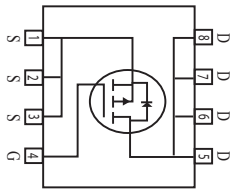
WEITRON

WT4433AM

Surface Mount P-Channel Enhancement Mode MOSFET

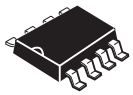


DRAIN CURRENT
-6 AMPERES
DRAIN SOURCE VOLTAGE
-30 VOLTAGE

Lead(Pb)-Free

Features:

*Super high dense cell design for low $R_{DS(ON)}$
$R_{DS(ON)}$ <35 mΩ@V_{GS} = -10V
$R_{DS(ON)}$ <55 mΩ@V_{GS} = -4.5V
*Rugged and Reliable
*SO-8 Package



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SO-8

Maximum Ratings (TA=25°C Unless Otherwise Specified)

Rating	Symbol	Value	Unite
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (T_J =125°C)(1)	I_D	-6	A
Pulsed Drain Current (2)	I_{DM}	-30	A
Drain-Source Diode Forward Current (1)	I_S	-1.7	A
Power Dissipation (1)	P_D	2.5	W
Maximax Junction-to-Ambient	$R_{\theta JA}$	50	°C/W
Operating Junction and Storage Temperature Range	T_J, Tstg	-55 to 150	°C

Device Marking

WT4433AM=STM4433A

Electrical Characteristics (T_A =25 °C Unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Static (2)					
Drain-Source Breakdown Voltage V_{GS}=0V, I_D=-250 uA	$V_{(BR)DSS}$	-30	-	-	V
Gate-Source Threshold Voltage V_{DS}=V_{GS}, I_D=-250 uA	$V_{GS\ (th)}$	-1	-1.9	-3.0	V
Gate-Source Leakage Current V_{DS}=0V, V_{GS}=±20V	I_{GSS}	-	-	±100	nA
Zero Gate Voltage Drain Current V_{DS}=-24V, V_{GS}=0V	I_{DSS}	-	-	-1	uA
Drain-Source On-Resistance V_{GS}=-10V, I_D=-5.8A V_{GS}=-4.5V, I_D=-2.0A	$R_{DS\ (on)}$	- -	21 40	35 55	mΩ
On-State Drain Current V_{DS}=-5V, V_{GS}=-10V	$I_{D(on)}$	-20	-	-	A
Forward Transconductance V_{DS}=-15V, I_D=-5.8A	g_{fs}	-	8.5	-	S
Dynamic (3)					
Input Capacitance V_{DS}=-15V, V_{GS}=0V, f=1MHZ	C_{iss}	-	920	-	PF
Output Capacitance V_{DS}=-15V, V_{GS}=0V, f=1MHZ	C_{oss}	-	270	-	
Reverse Transfer Capacitance V_{DS}=-15V, V_{GS}=0V, f=1MHZ	C_{rss}	-	170	-	
Switching (3)					
Turn-On Delay Time V_D=-15V, V_{GEN}=-10V, I_D=-1A, R_{GEN}=6Ω	$t_{d(on)}$	-	8.6	-	nS
Rise Time V_D=-15V, V_{GEN}=-10V, I_D=-1A, R_{GEN}=6Ω	t_r	-	35.3	-	nS
Turn-Off Time V_D=-15V, V_{GEN}=-10V, I_D=-1A, R_{GEN}=6Ω	$t_{d(off)}$	-	36.9	-	nS
Fall Time V_D=-15V, V_{GEN}=-10V, I_D=-1A, R_{GEN}=6Ω	t_f	-	36.3	-	nS
Total Gate Charge V_{DS}=-15V, V_{GS}=-10V, I_D=-5.8A V_{DS}=-15V, V_{GS}=-4.5V, I_D=-5.8A	Qg	- -	17.5 9.4	- -	nc
Gate-Source Charge V_{DS}=-15V, V_{GS}=-10V, I_D=-5.8A	Qgs	-	2.9	-	nc
Gate-Drain Charge V_{DS}=-15V, V_{GS}=-10V, I_D=-5.8A	Qgd	-	4.8	-	nc
Drain-Source Diode Forward Voltage V_{GS}=0V, I_S=-1.7A	V_{SD}	-	-0.77	-1.2	V

Note: 1. Surface Mounted on FR4 Board t ≤ 10sec.
2. Pulse Test : Pulse Width ≤ 300us, Duty Cycle ≤ 2%.
3. Guaranteed by Design, not Subject to Production Testing.

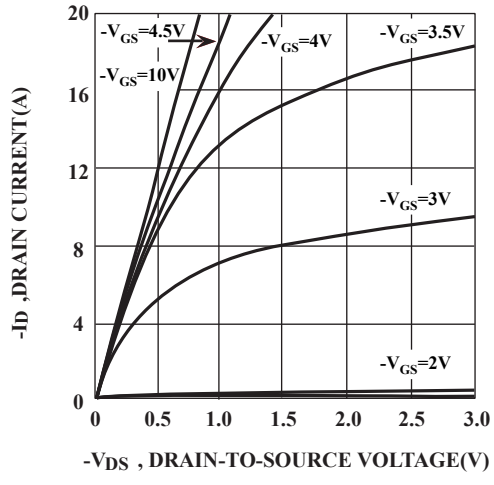


FIG.1. Output Characteristics

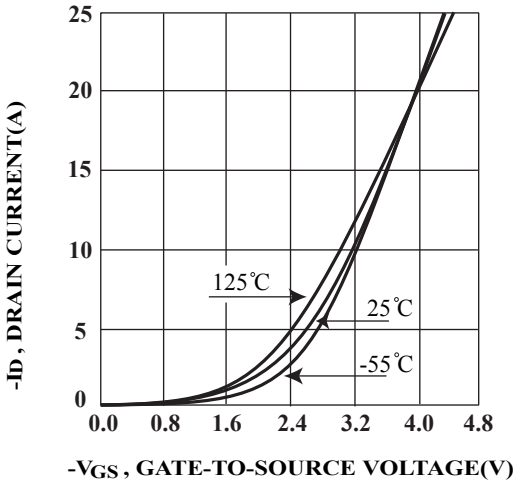


FIG.2 Transfer Characteristics

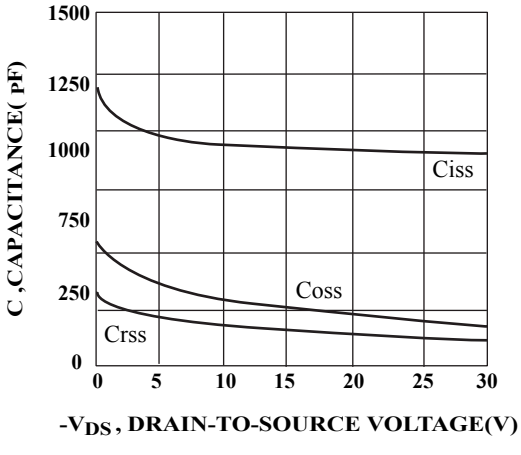


FIG.3 Capacitance

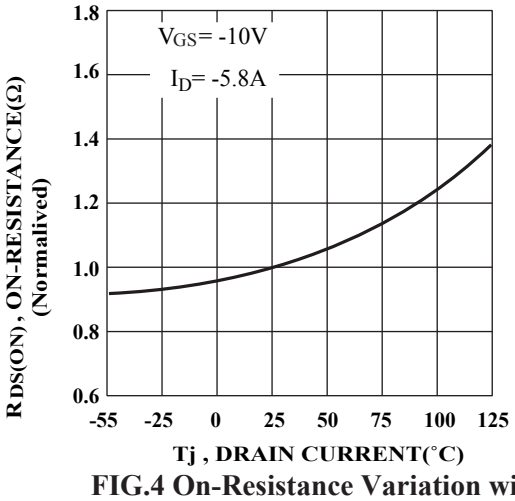


FIG.4 On-Resistance Variation with Temperature

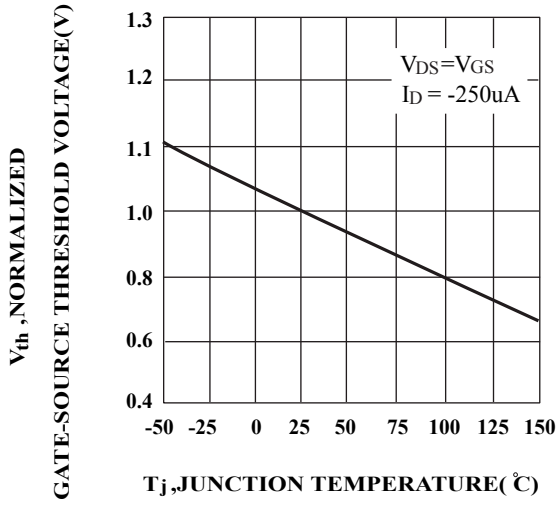


FIG.5 Gate Threshold Variation with Temperature

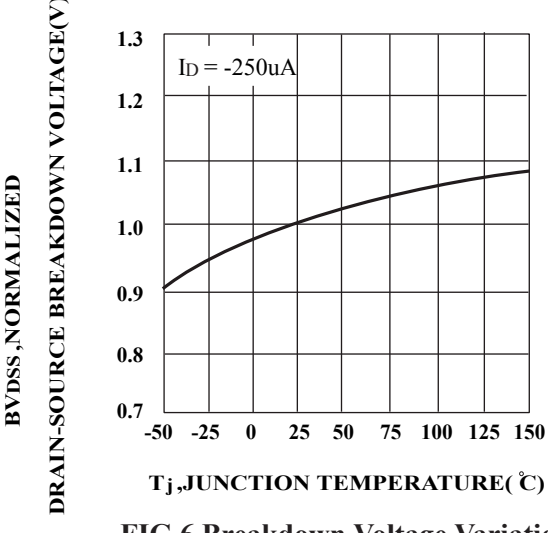


FIG.6 Breakdown Voltage Variation with Temperature

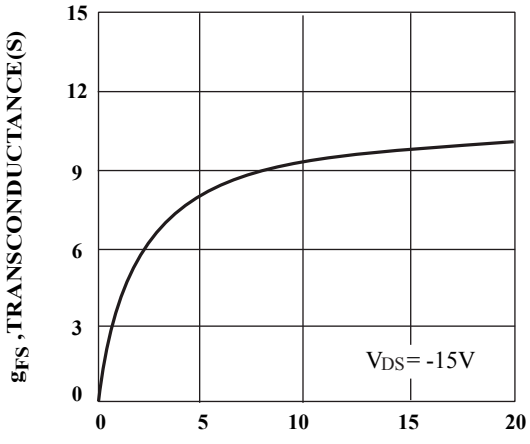


FIG.7 Transconductance Variation with Drain Current

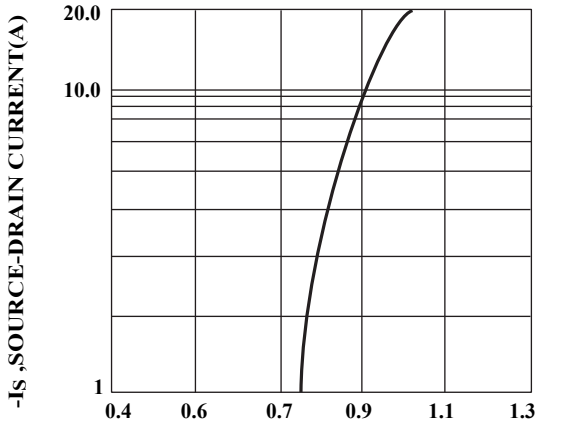


FIG.8 Body Diode Forward Voltage Variation with Source Current

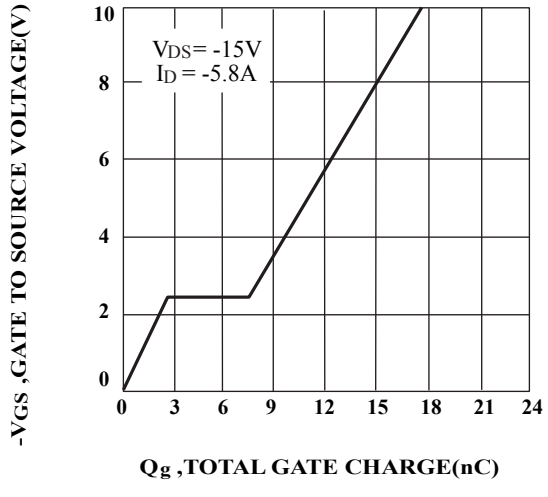


FIG.9 Gate Charge

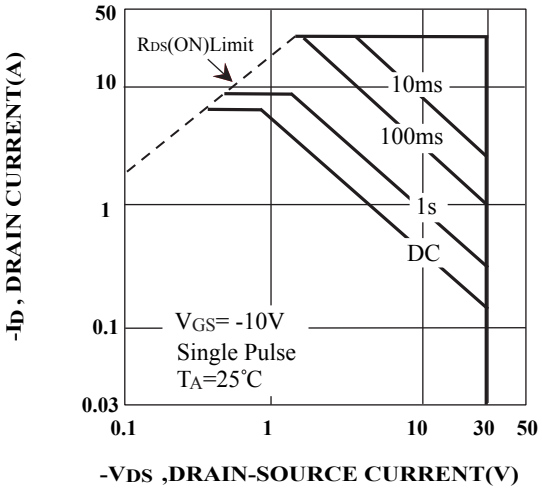


FIG.10 Maximum Safe Operating Area

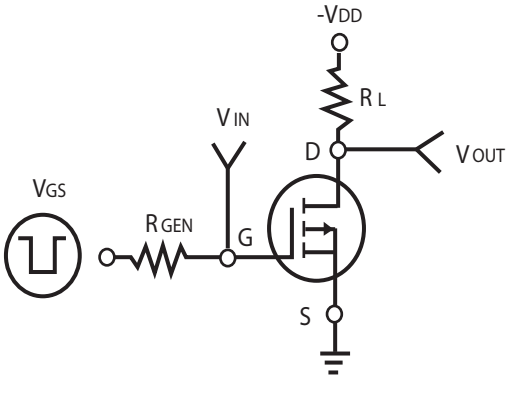


FIG.11 Switching Test Circuit

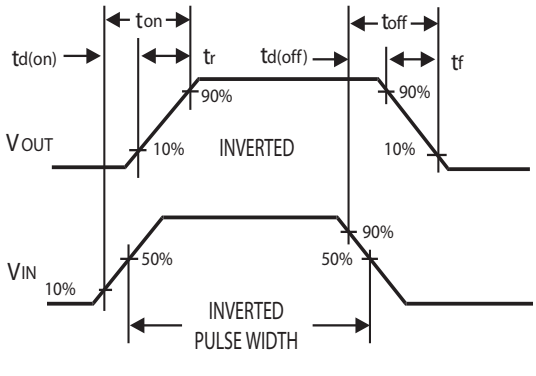
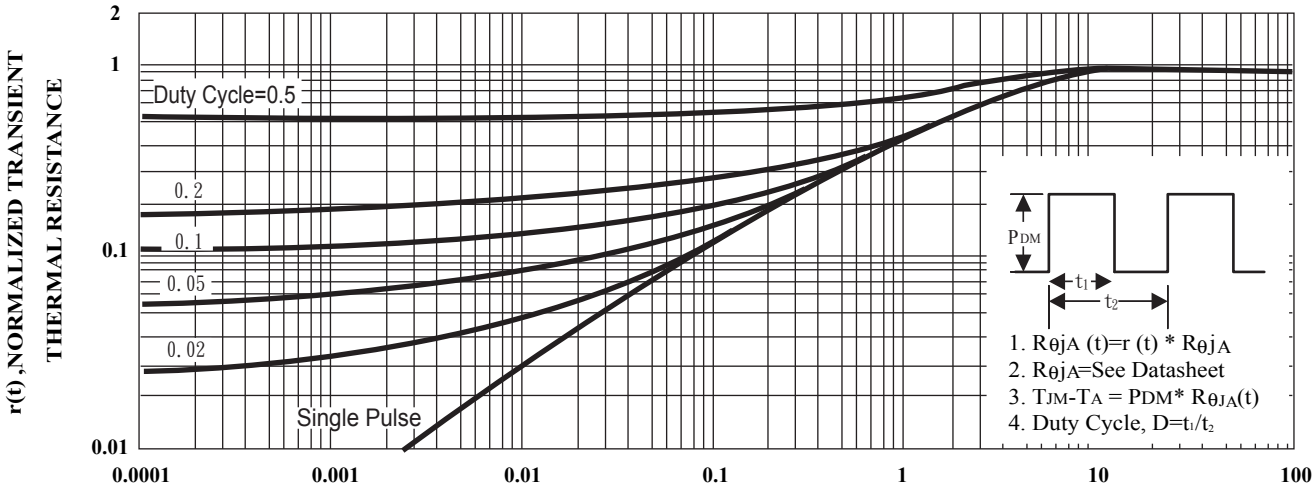


FIG.12 Switching Waveforms

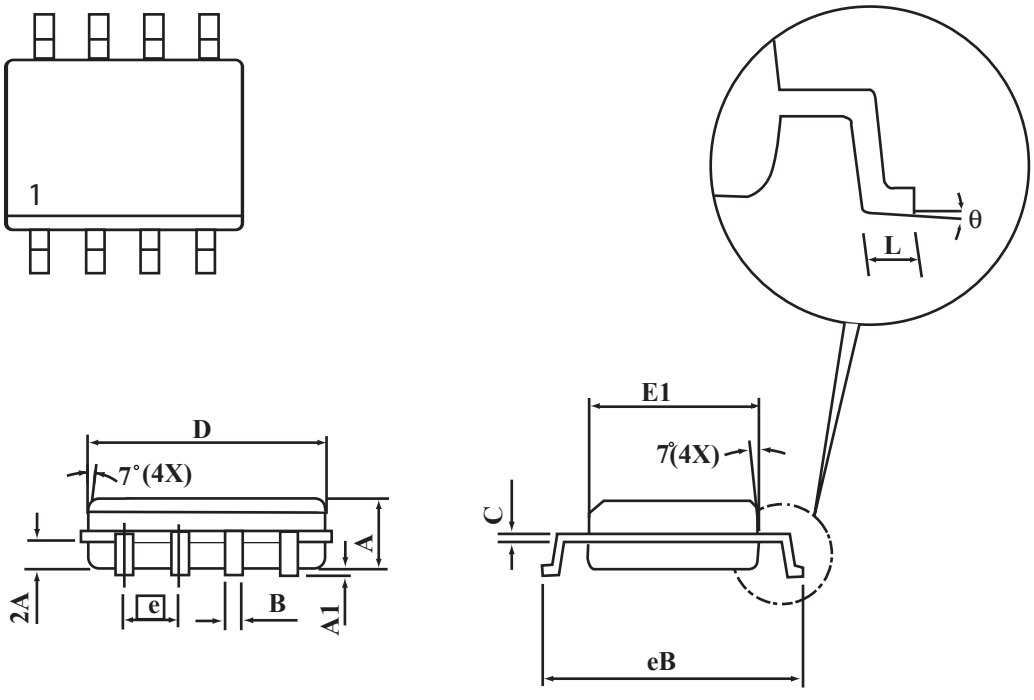


SQUARE WAVE PULSE DURATION(SEC)

FIG.13 NORMALIZED THERMAL TRANSIENT IMPEDANCE CUREVE

SO-8 Package Outline Dimensions

Unit:mm



SYMBOLS	MILLIMETERS	
	MIN	MAX
A	1.35	1.75
A1	0.10	0.20
B	0.35	0.45
C	0.18	0.23
D	4.69	4.98
E1	3.56	4.06
eB	5.70	6.30
e	1.27 BSC	
L	0.60	0.80
θ	0°	8°