

Dual N-Channel MOSFET

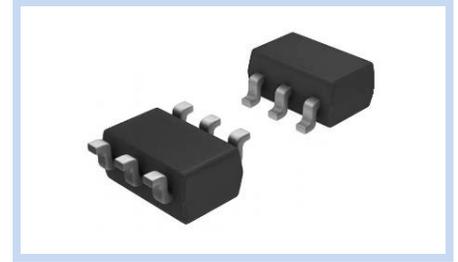
30V 4A 1.25W SOT-23-6

MFT32N4A0S236

MERITEK

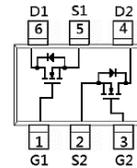
FEATURE

- $R_{DS(ON)} < 48m\Omega$, $V_{GS}=10V$, $I_D=4.0A$
- $R_{DS(ON)} < 70m\Omega$, $V_{GS}=4.5V$, $I_D=2.8A$
- Advanced Trench Process Technology
- Application: Switch Load, PWM Systems, etc.
- High Density Cell Design for Ultra Low On-Resistance



MECHANICAL DATA

- Case: SOT-23-6 Package
- Terminals: Solderable per MIL-STD-750, Method 2026

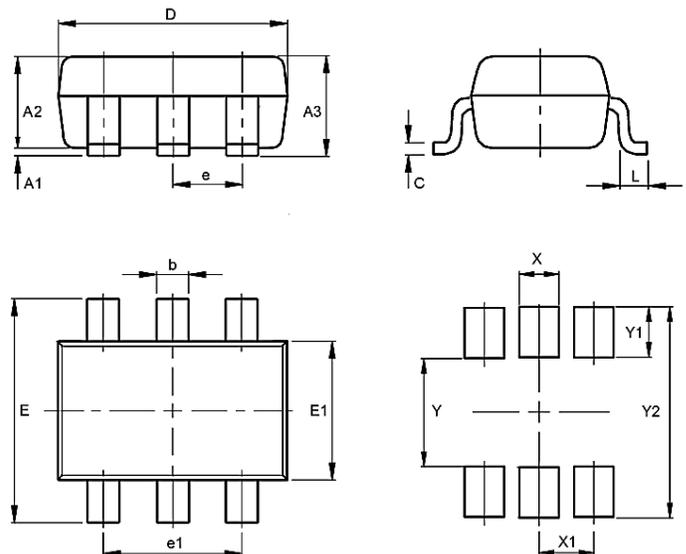


MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current – Continuous		I_D	4	A
Drain Current – Pulsed		I_{DM}	16	A
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	1.25	W
	Derate above 25°C		10	mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient		$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

DIMENSIONS

SOT-23-6	Min (mm)	Max (mm)
A1	0.00	0.15
A2	0.90	1.30
A3	-	1.45
b	0.30	0.50
C	0.08	0.22
D	2.80	3.00
E	2.60	3.00
E1	1.50	1.70
e	0.95	
e1	1.90	
L	0.30	0.60
X	0.60	
X1	0.95	
Y	1.30	
Y1	0.95	
Y2	3.20	



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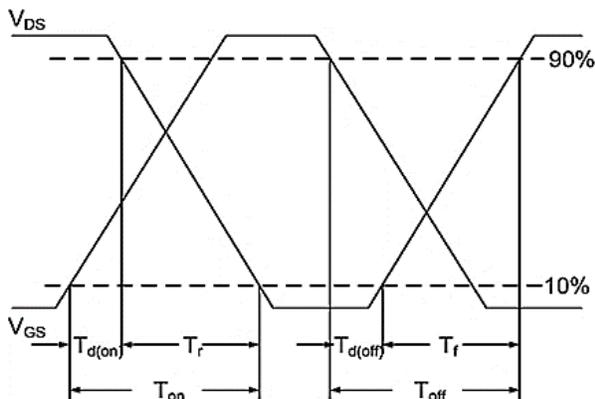
ELECTRICAL CHARACTERISTICS

Off Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	30	-	-	V
Drain-Source Leakage Current	$V_{DS}=30V, V_{GS}=0V,$	I_{DSS}	-	0.01	1	μA
Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	± 10	± 100	nA
On Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=4A$	$R_{DS(ON)}$	-	34	48	m Ω
	$V_{GS}=4.5V, I_D=2.8A$		-	50	70	
Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	$V_{GS(th)}$	1.0	1.37	2.1	V
Dynamic Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Total Gate Charge	$V_{DS}=15V, V_{GS}=10V, I_D=4A$	Q_g	-	5.8	-	nC
Gate-Source Charge		Q_{gs}	-	1	-	
Gate-Drain Charge		Q_{gd}	-	1	-	
Turn-On Delay Time	$V_{DD}=15V, V_{GS}=10V, R_G=6\Omega, I_D=4A$	$T_{d(on)}$	-	2.5	-	ns
Rise Time		T_r	-	39	-	
Turn-Off Delay Time		$T_{d(off)}$	-	23	-	
Fall Time		T_f	-	28	-	
Input Capacitance	$V_{DS}=15V, V_{GS}=0V, F=1MHz$	C_{iss}	-	235	-	pF
Output Capacitance		C_{oss}	-	36	-	
Reverse Transfer Capacitance		C_{rss}	-	24	-	
Drain-Source Body Diode	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Diode Forward Current	--	I_S	-	-	1.5	A
Diode Forward Voltage	$V_{GS}=0V, I_S=1A$	V_{SD}	-	0.75	1.2	V

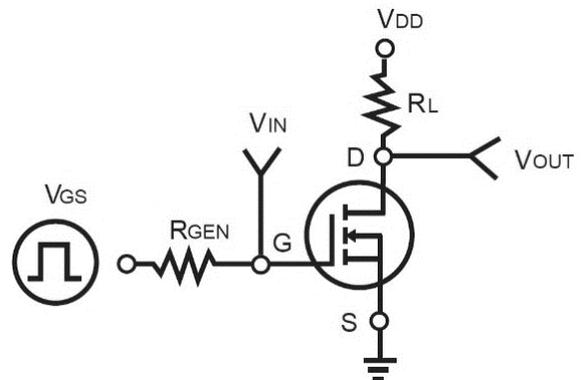
Note:

1. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on 1 inch FR-4 with 2oz. square pad of copper.
2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
3. Essentially independent of operating temperature typical characteristics.
4. The maximum current rating is package limited.

Switching Time Waveform

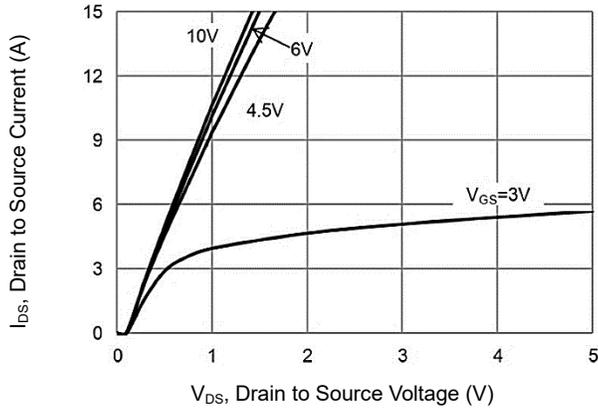


Switching Test Circuit

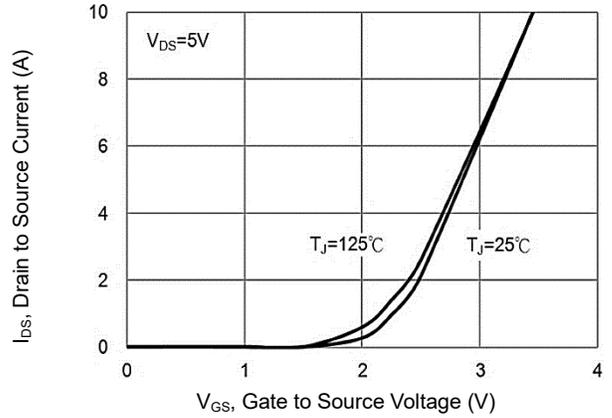


CHARACTERISTIC CURVES

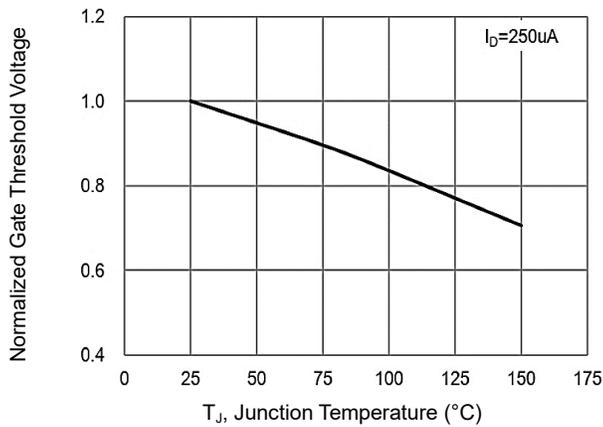
On-Region Characteristics



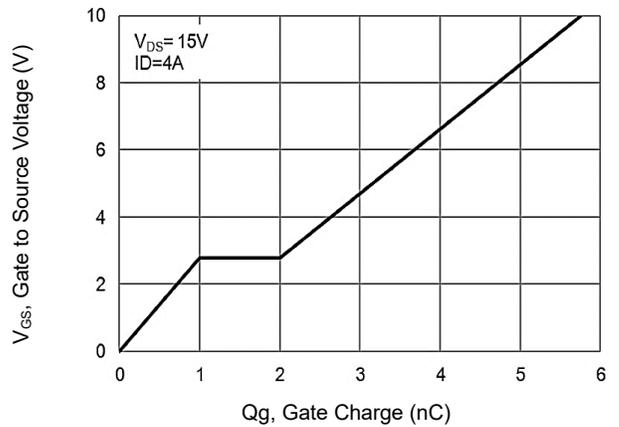
Transfer Characteristics



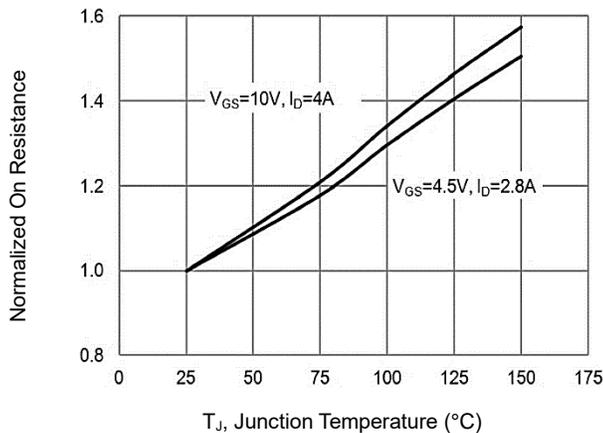
Normalized $V_{GS(th)}$ vs. Temperature



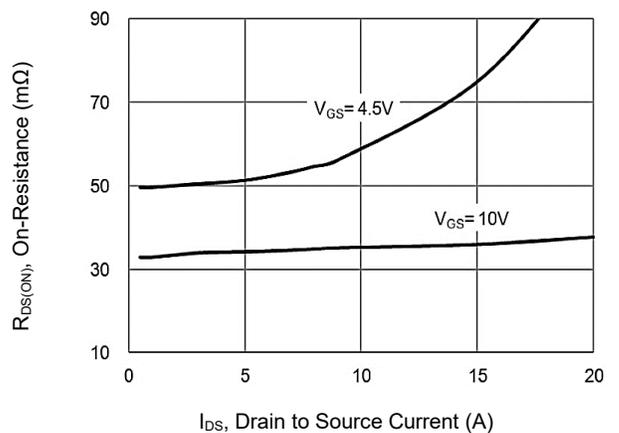
Gate Charge Waveform



On-Resistance vs. Junction Temperature

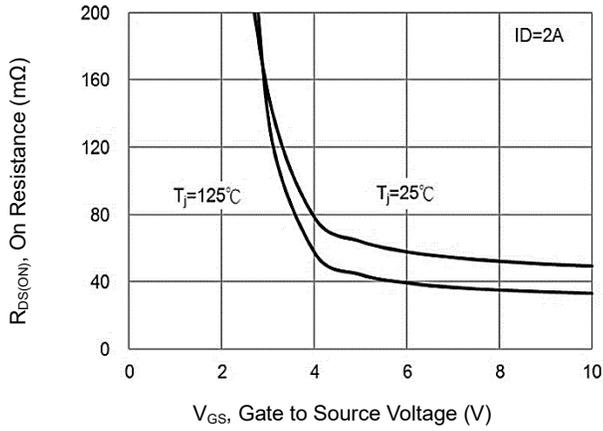


On-Resistance vs. Drain Current

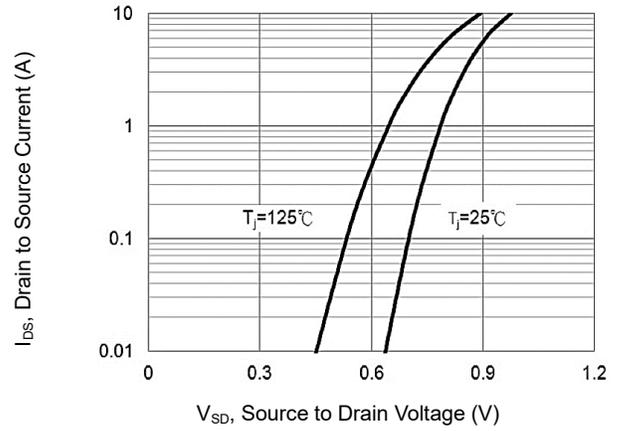


CHARACTERISTIC CURVES

On-Resistance Variation with V_{GS}



Body Diode Characteristics



Capacitance vs. Drain-Source Voltage

