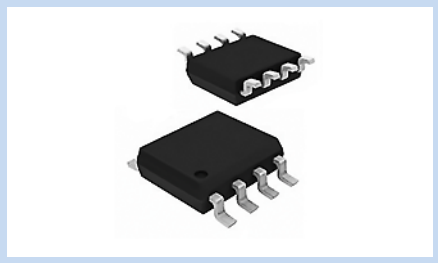
Dual N-Channel MOSFET
60V 8.8A 25W SOP-8

MFT62N8A8S8

MERITEK

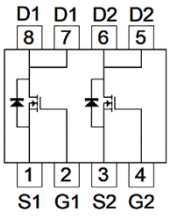
FEATURE

- $R_{DS(ON)}$<47mΩ, V_{GS}=10V, I_D=4A
- $R_{DS(ON)}$ <57mΩ, V_{GS}=4.5V, I_D=3A
- Low Gate Charge
- Fast Switching Characteristic
- Low On Resistance



MECHANICAL DATA

- Case: SOP-8 Package
- Terminals: Solderable per MIL-STD-750, Method 2026



RoHS

MAXIMUM RATINGS

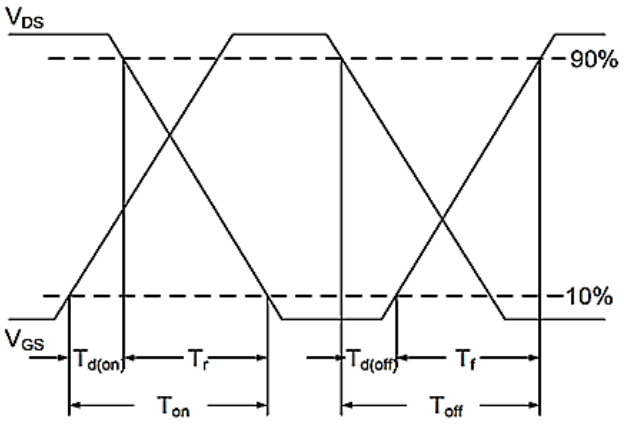
Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current – Continuous	T_C= 25°C	I_D	8.8	A
	T_C= 100°C		5.5	
Drain Current – Pulsed		I_{DM}	35	A
Diode Forward Current	T_C= 25°C	I_S	6	A
Power Dissipation	T_C= 25°C	P_D	7.3	W
	T_C= 100°C		2.9	
Drain Current – Continuous	T_A= 25°C	I_D	4.3	A
	T_A= 70°C		3.4	
Power Dissipation	T_A= 25°C	P_D	1.8	W
	T_A= 70°C		1.1	
Single Pulse Avalanche Current	L=0.1mH	I_{AS}	10	A
Single Pulse Avalanche Energy	L=0.5mH	E_{AS}	9	mJ
Thermal Resistance Junction to Case		$R_{\theta JC}$	17	°C/W
Thermal Resistance Junction to Ambient		$R_{\theta JA}$	71	°C/W
Operating Junction and Storage Temperature		T_J, T_{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

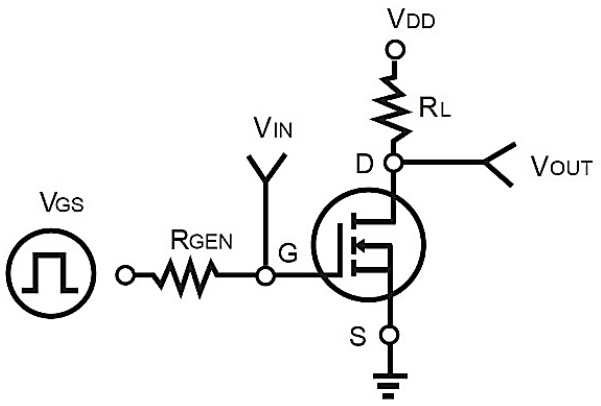
Off Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250μA	BV_{DSS}	60	--	--	V
Drain-Source Leakage Current	V_{DS}=48V, V_{GS}=0V,	I_{DSS}	--	--	1	μA
Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	--	--	±100	nA
On Characteristics	**Conditions**	**Symbol**	**Min**	**Typ.**	**Max**	**Unit**
Static Drain-Source On-Resistance	V_{GS}=10V, I_D=4A	$R_{DS(ON)}$	--	36	47	mΩ
	V_{GS}=4.5V, I_D=3A		--	41	57	
Gate Threshold Voltage	V_{GS}=V_{DS} , I_D=250μA	$V_{GS(th)}$	1.0	--	2.5	V
Forward Transfer Admittance	V_{GS}=10V, I_D=4A	G_{FS}	--	6	--	S
Dynamic Characteristics	**Conditions**	**Symbol**	**Min**	**Typ.**	**Max**	**Unit**
Total Gate Charge	V_{DS}=30V, V_{GS}=-10V, I_D=5A	Q_g	--	18	--	nC
Gate-Source Charge		Q_{gs}	--	2.1	--	
Gate-Drain Charge		Q_{gd}	--	3.8	--	
Turn-On Delay Time	V_{DS}=30V, V_{GS}=10V, R_G=6Ω, I_D=2A	$T_{d(on)}$	--	6.5	--	ns
Rise Time		T_r	--	7.4	--	
Turn-Off Delay Time		$T_{d(off)}$	--	41	--	
Fall Time		T_f	--	6.3	--	
Input Capacitance	V_{DS}=30V , V_{GS}=0V , F=1MHz	C_{iss}	--	730	--	pF
Output Capacitance		C_{oss}	--	45	--	
Reverse Transfer Capacitance		C_{rss}	--	37	--	
Gate Resistance	F=1MHz	R_g	--	2.8	--	Ω
Drain-Source Body Diode	**Conditions**	**Symbol**	**Min**	**Typ.**	**Max**	**Unit**
Diode Forward Voltage	V_{GS}=0V , I_S=5A	V_{SD}	--	0.85	1.2	V
Reverse Recovery Time	I_F=5A, dI_F/dt=100A/μs	T_{rr}	--	12	--	ns
Reverse Recovery Charge		Q_{rr}	--	7.5	--	nC

Note:
1. Pulse width≤300μs, duty cycle≤2%
2. T_A= 25°C, unless otherwise specified.
3. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction junction-to -case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used.
4. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2 oz. copper, in a still air environment with T_A=25°C. The power dissipati on P_D is based on $R_{\theta JA}$ and the maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.
5. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are base d on low frequency and low duty cycles to keep initial T_J=25°C°

Switching Time Waveform

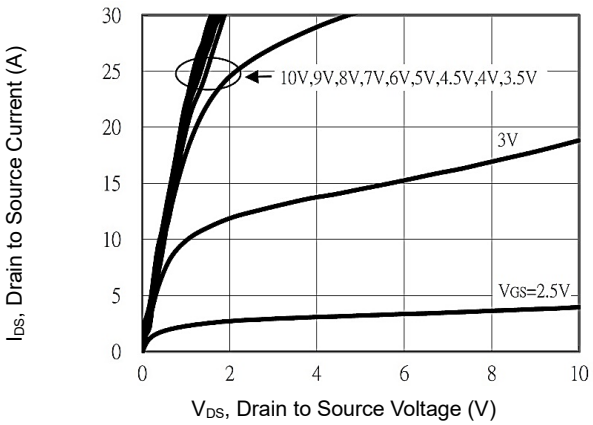


Switching Test Circuit

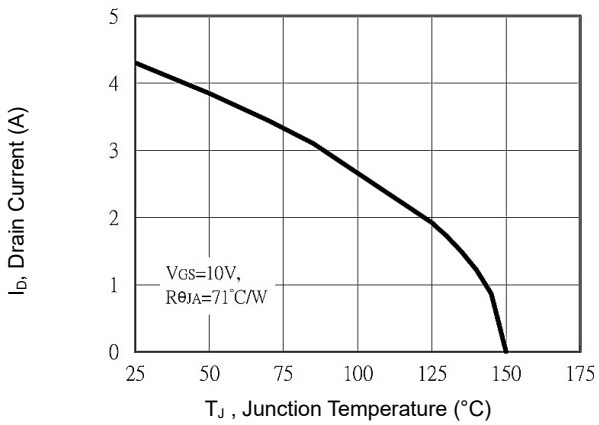


CHARACTERISTIC CURVES

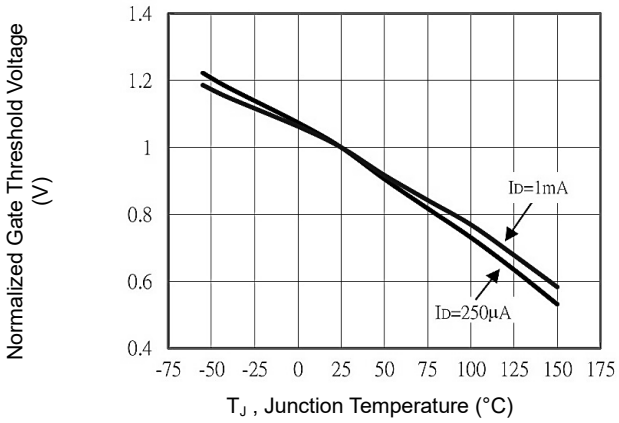
On-Region Characteristics



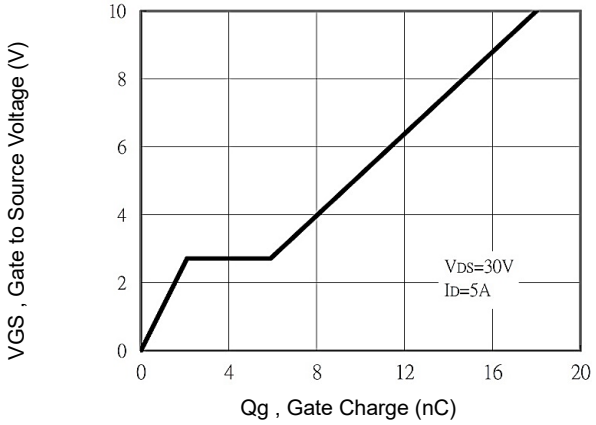
Maximum Drain Current



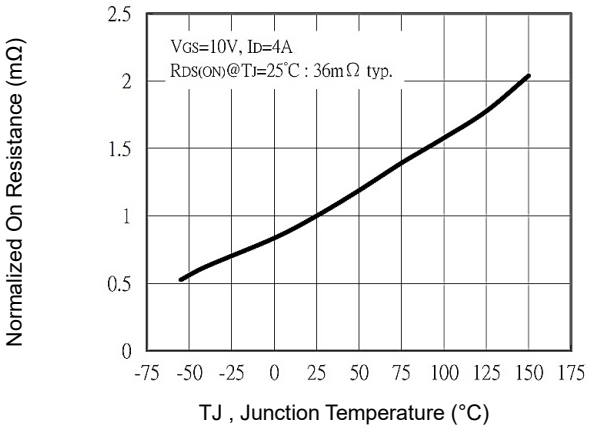
Normalized V_{th} vs. T_J



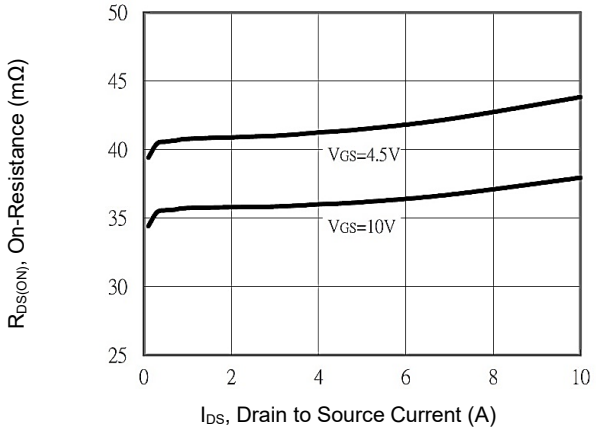
Gate Charge Waveform



Normalized $R_{DS(ON)}$ vs. T_J

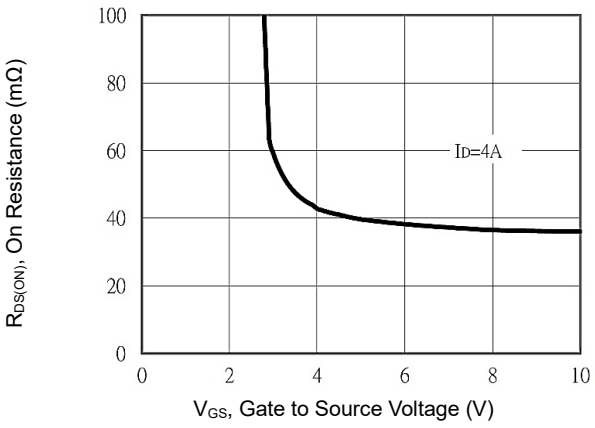


On-Resistance vs. Drain Current

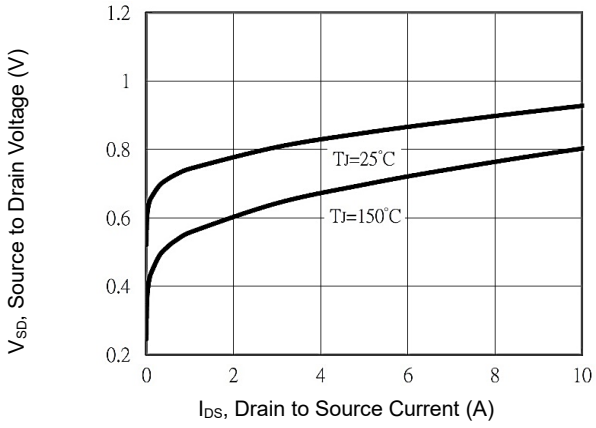


CHARACTERISTIC CURVES

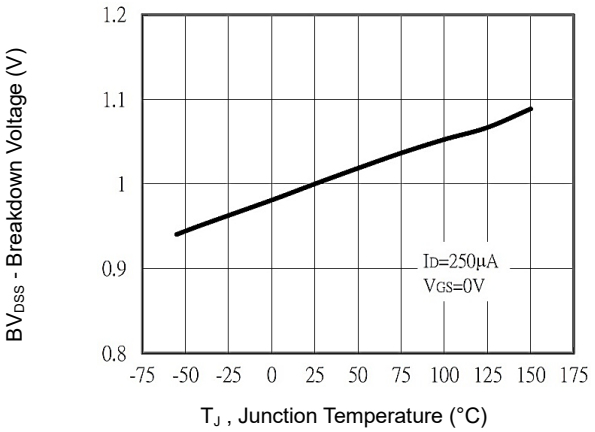
On-Resistance Variation with V_{GS}



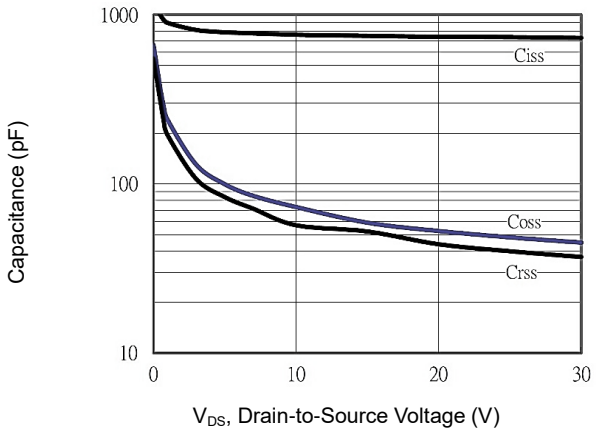
Body Diode



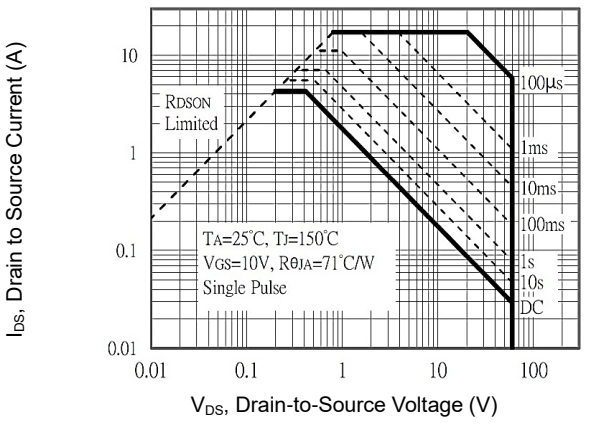
Breakdown Voltage vs Junction Temperature



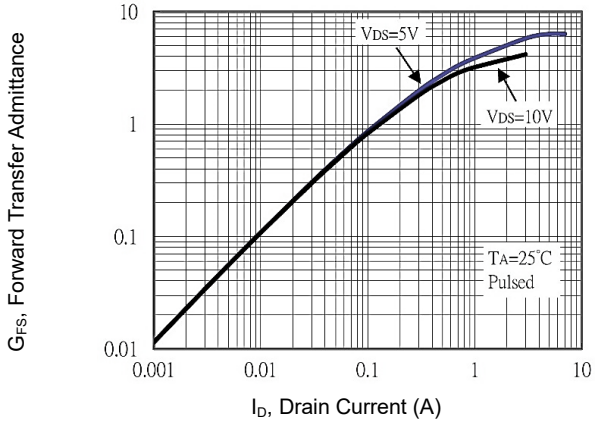
Capacitance vs. Drain-Source Voltage



Maximum Safe Operating Area

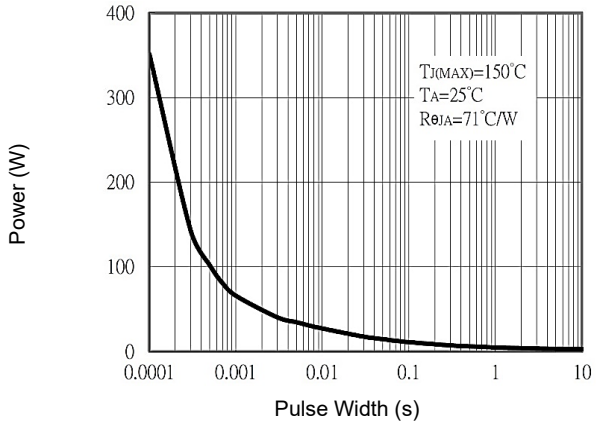


Forward Transfer Admittance

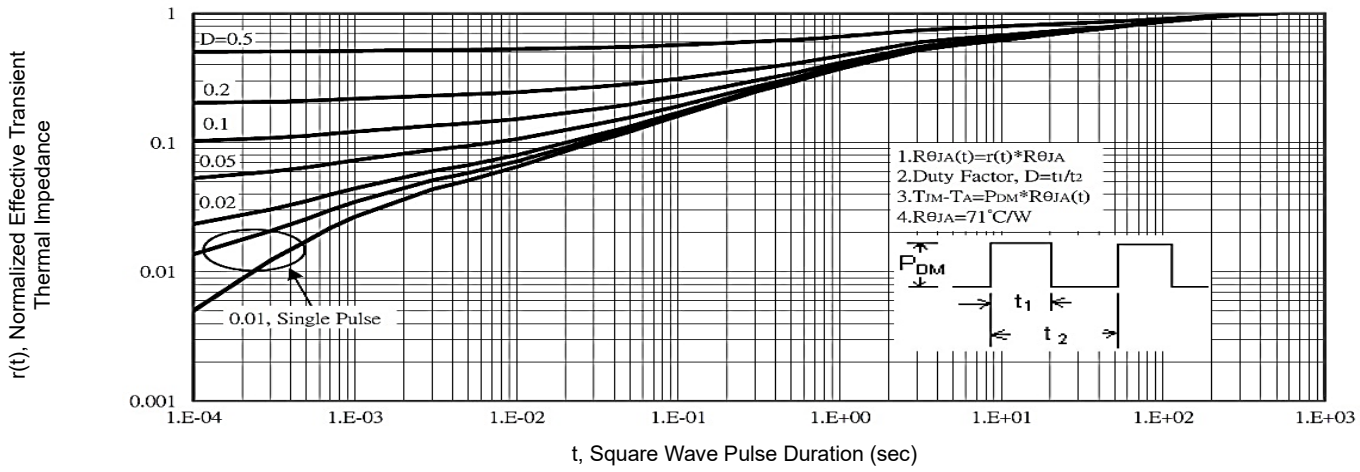


CHARACTERISTIC CURVES

Single Pulse Power Rating



Normalized Transient Thermal Impedance Curve



DIMENSIONS

SOP-8	Min (mm)	Max (mm)
A1	0.10	0.25
A2	1.35	1.55
A3	1.35	1.75
b	0.33	0.51
c	0.17	0.25
D	4.70	5.10
E	5.80	6.20
E1	3.80	4.00
e	1.27	
L	0.40	1.27
X	0.6	
X1	3.81	
Y	1.52	
Y1	7.04	
C	1.27