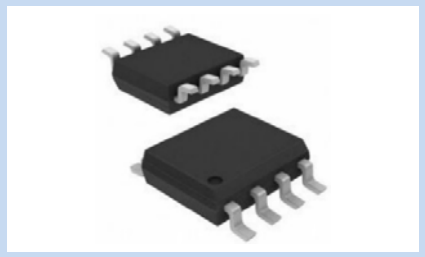
N-Channel MOSFET
100V 26A 18W SO-8

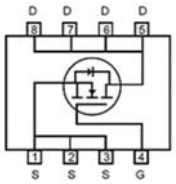
MFT10N26S8

MERITEK

FEATURE

- $R_{DS(ON)}$<14mΩ, V_{GS}= 10V, I_D=20A
- Super High Dense Cell Design for Extremely Low $R_{DS(ON)}$
- High Power and Current Handing Capability
- Green Device Available





RoHS

MECHANICAL DATA

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

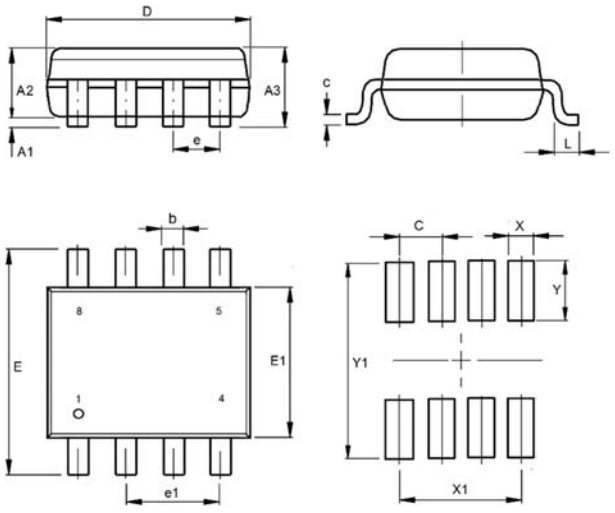
MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	V_{GS}= 10V, T_C= 25°C	I_D	26	A
	V_{GS}= 10V, T_C= 100°C		16	A
	V_{GS}= 10V, T_A= 25°C		9	A
	V_{GS}= 10V, T_A= 70°C		7.2	A
Pulsed Drain Current		I_{DM}	104	A
Body Diode Forward Current	T_C= 25°C	I_S	40	A
Avalanche Current	L = 0.1mH	I_{AS}	30	A
Avalanche Energy	L = 0.5mH	E_{AS}	64	mJ
Power Dissipation	T_C= 25°C	P_D	18	W
	T_C= 100°C		6.3	W
	T_A= 25°C		2.2	W
	T_A= 70°C		1.4	W
Operating and Storage Temperature Range		T_J, T_{STG}	- 55 to +150	°C
Thermal Resistance, Junction to Case		$R_{\theta JC}$	7	°C/W
Thermal Resistance, Junction to Ambient		$R_{\theta JA}$	57	°C/W

Note:
1. The power dissipation P_D is based on $T_{J(MAX)}$= 150°C, using junction junction-to-case thermal resistance,
2. 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 dissipation 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.
3. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$= 150°C. Ratings are based on low frequency to keep initial T_J= 25°

DIMENSIONS

Item	Min (mm)	Max (mm)
A1	0.10	0.25
A2	1.35	1.55
A3	1.45	2.00
b	0.33	0.51
c	0.17	0.25
D	4.70	5.10
e	1.27 Typical	
e1	2.54	2.54
E	5.80	6.20
E1	3.70	4.06
L	0.40	1.27
Y	1.00	1.00
Y1	6.75	6.75
X	0.50	0.50
X1	3.81	3.81
C	1.27	1.27



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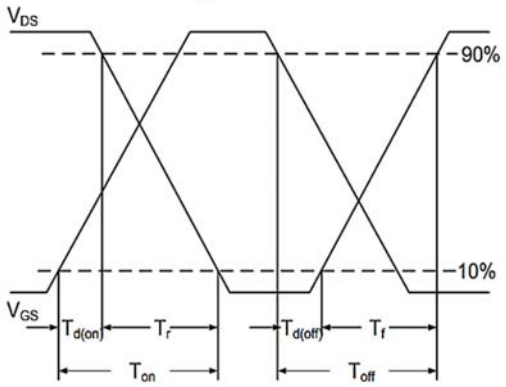
ELECTRICAL CHARACTERISTICS

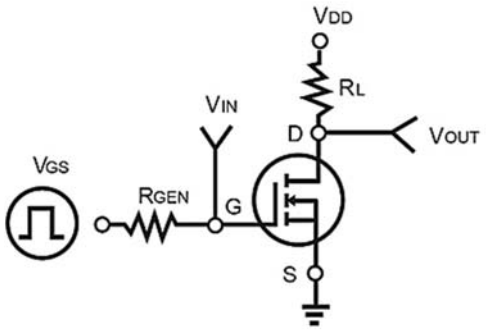
Off Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	V_{GS}= 0V, I_D= 250uA	BV_{DSS}	100	-	-	V
Forward Transconductance	V_{DS}= 10V, I_D= 10A	G_{FS}	-	9.6	-	S
Zero Gate Voltage Drain Current	V_{GS}= 0V, V_{DS}= 80V	I_{DSS}	-	-	1	μA
Gate Source Leakage Current	V_{GS}= ±20V, V_{DS}= 0V	I_{GSS}	-	-	±100	nA
On Characteristics	**Conditions**	**Symbol**	**Min**	**Typ.**	**Max**	**Unit**
Gate Threshold Voltage	V_{GS}= V_{DS}, I_D= 250uA	$V_{GS\ (th)}$	2	-	4	V
Static Drain Source On-Resistance	V_{GS}= 10V, I_D= 20A	$R_{DS(ON)}$	-	10.5	14	mΩ
Dynamic Characteristics	**Conditions**	**Symbol**	**Min**	**Typ.**	**Max**	**Unit**
Input Capacitance	V_{GS}= 0V, V_{DS}= 50V, f= 1MHz	C_{iss}	-	2026	-	pF
Output Capacitance		C_{oss}	-	225	-	
Reverse Transfer Capacitance		C_{rss}	-	29	-	
Gate Resistance	f= 1MHz	R_g	-	0.6	-	Ω
Total Gate Charge	V_{GS}= 10V, V_{DS}= 50V, I_D= 20A	Q_g	-	31	-	nC
Gate-Source Charge		Q_{gs}	-	14	-	
Gate-Drain Charge		Q_{gd}	-	8	-	
Turn-On Delay Time	V_{GS}= 10V, V_{DS}= 50V, I_D= 20A, R_{GS}= 1Ω	$t_{d(on)}$	-	29	-	ns
Turn-On Rise Time		t_r	-	4.6	-	
Turn-Off Delay Time		$t_{d(off)}$	-	30	-	
Turn-Off Fall Time		t_f	-	9.6	-	
Drain-Source Body Diode	**Conditions**	**Symbol**	**Min**	**Typ.**	**Max**	**Unit**
Drain-Source Diode Forward Voltage	V_{GS}= 0V, I_S= 20A	V_{SD}	-	0.8	1.2	V
Reverse Recovery Time	I_F= 20A, dI_F/dt= 100A/μs	t_{rr}	-	44	-	ns
Reverse Recovery Charge		Q_{rr}	-	87	-	nC

Note:
1. Pulse Test: Pulse Width ≦ 300μs, Duty Cycle ≦ 2%.

Switching Time Waveform

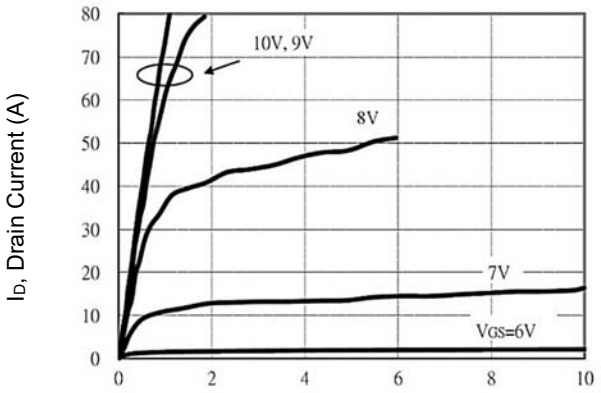


Switching Test Circuit

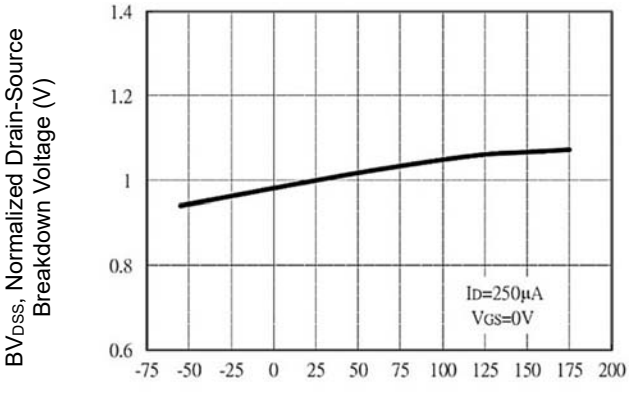


CHARACTERISTIC CURVES

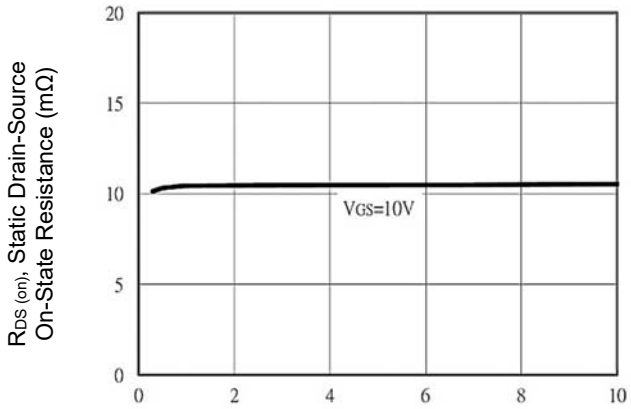
Typical Output Characteristics



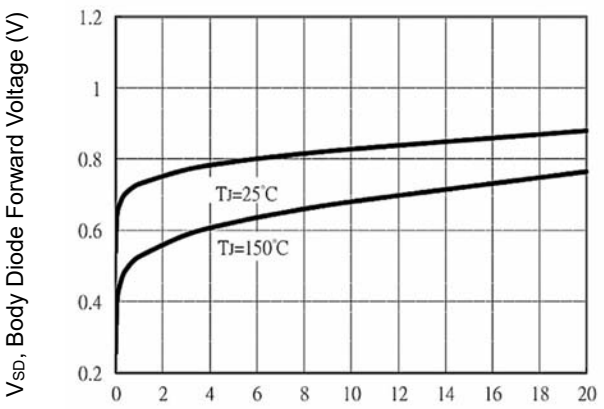
Breakdown Voltage vs. Junction Temperature



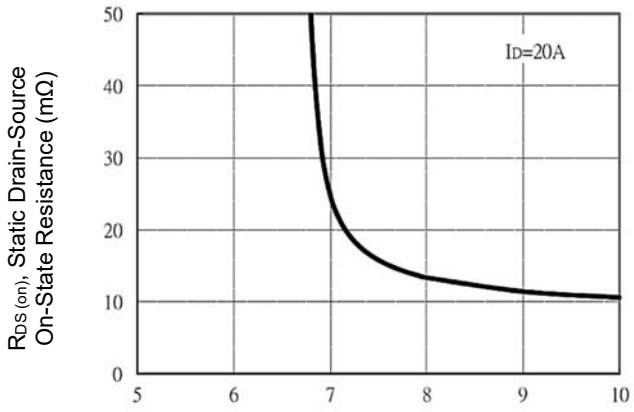
Static On-Resistance vs. Drain Current



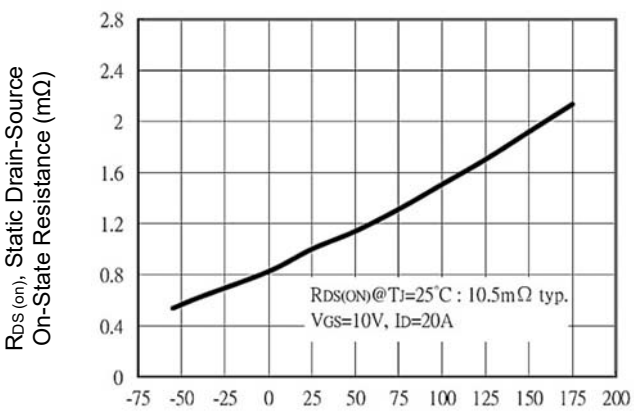
Body Diode Current v.s. Source-Drain Voltage



Static Drain-Source On-State Resistance vs. Gate-Source Voltage

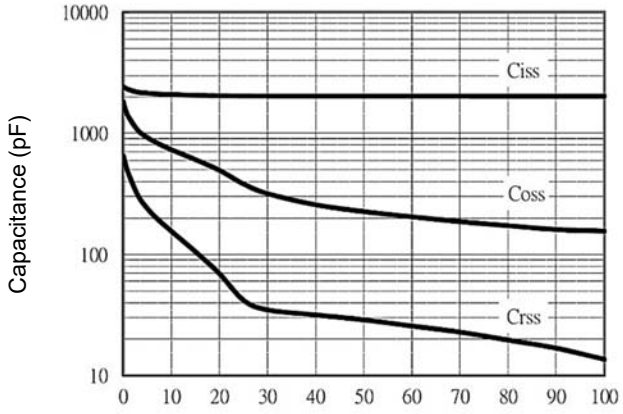


Drain-Source On-State Resistance vs. Junction Temperature

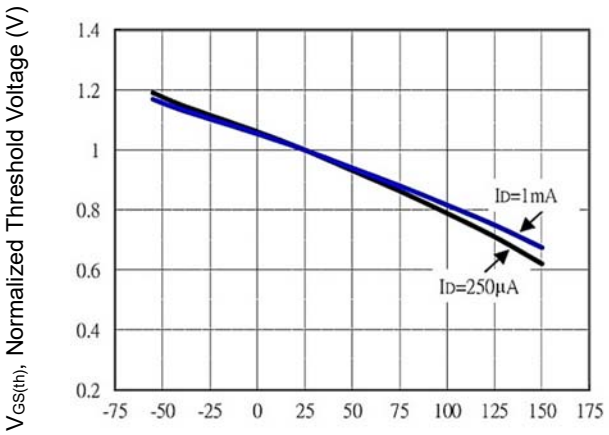


CHARACTERISTIC CURVES

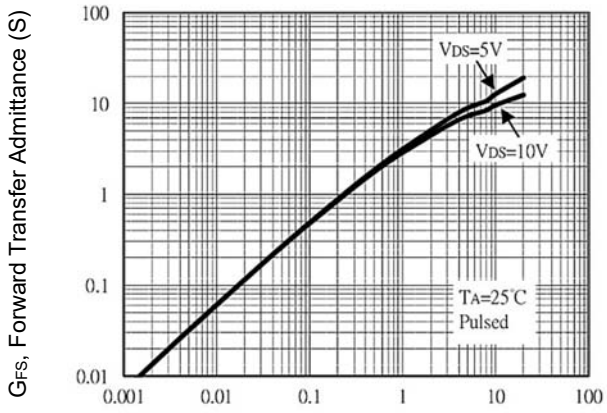
Capacitance vs. Drain-to-Source Voltage



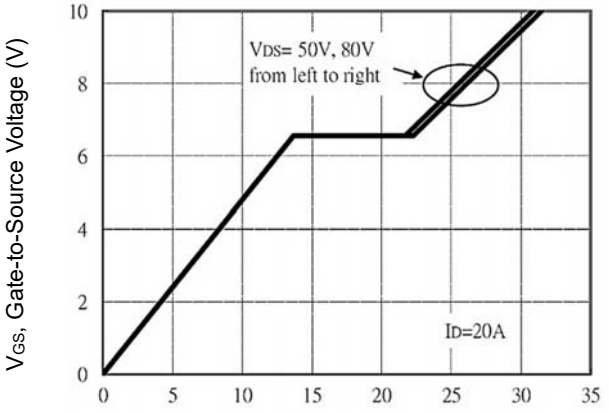
Threshold Voltage vs. Junction Temperature



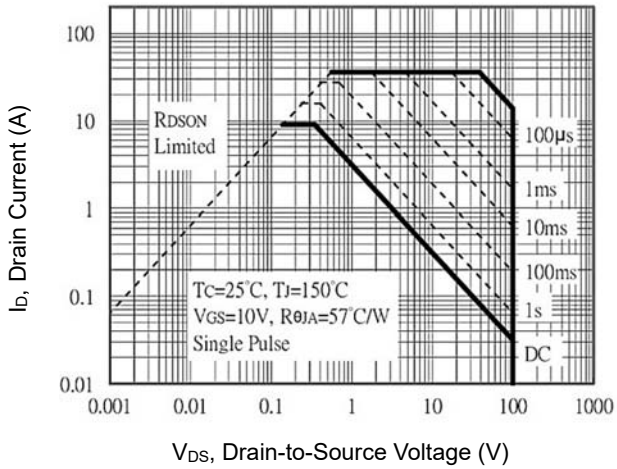
Forward Transfer Admittance vs. Drain Current



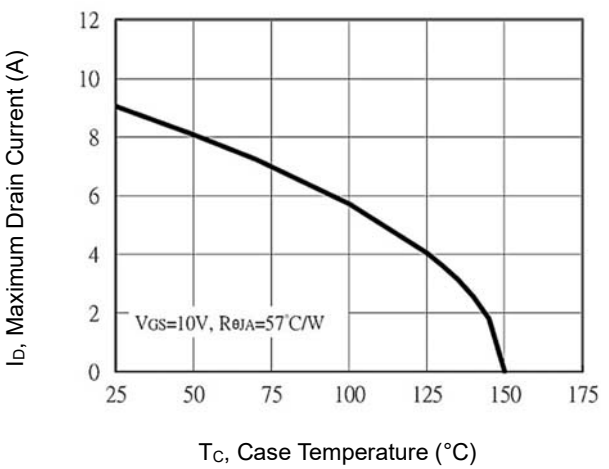
Gate Charge Characteristics



Maximum Safe Operating Area

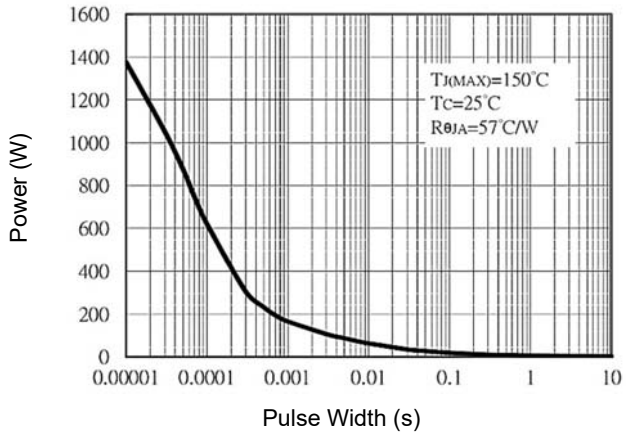


Maximum Drain Current vs. Case Temperature



CHARACTERISTIC CURVES

Single Pulse Power Rating, Junction to Case



Transient Thermal Response Curves