

N-Channel MOSFET

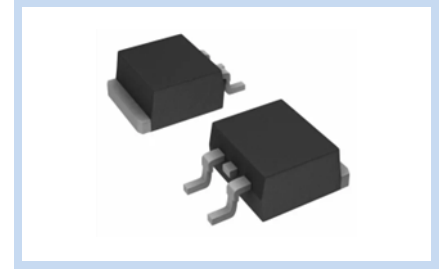
600V 15A 160W TO-263

MFT60N15T263

MERITEK

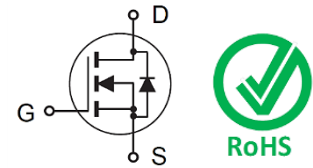
FEATURE

- $R_{DS(ON)} < 0.28\Omega$, $V_{GS}=10V$, $I_D=15A$
- High Power and Current Handling Capability
- Super High Dense Cell Design for Extremely Low $R_{DS(ON)}$
- RoHS compliant.



MECHANICAL DATA

- Case: TO-263 Package
- Terminals: Solderable per MIL-STD-750, Method 2026



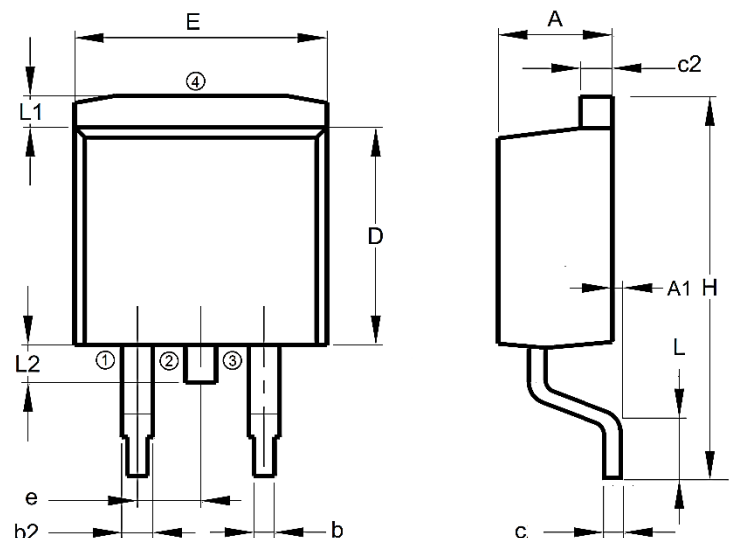
MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	± 30	V
Drain Current – Continuous	$T_C=25^\circ\text{C}$	I_D	15	A
Drain Current – Pulsed		I_{DM}	60	A
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	160	W
	Derate above 25°C		1.28	W/ $^\circ\text{C}$
Single Pulsed Avalanche Energy		E_{AS}	400	mJ
Single Pulsed Avalanche Current		I_{AS}	4	A
Thermal Resistance Junction to Ambient		$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Thermal Resistance Junction to Case		$R_{\theta JC}$	0.78	$^\circ\text{C/W}$
Operating Junction and Storage Temperature		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

DIMENSIONS

Item	Min (mm)	Max (mm)
A	4.29	4.70
A1	1.22	1.40
b	0.69	0.94
b1	1.22	1.40
C	0.36	0.56
D	8.64	9.65
E	9.70	10.54
e	2.29	2.79
E1	4.83	5.33
H	14.61	15.88
L	4.70	5.84
L1	1.19	1.78
L2	2.24	2.82
L3	--	1.40

Note: 1: Gate, 2, 4: Drain, 3: Source



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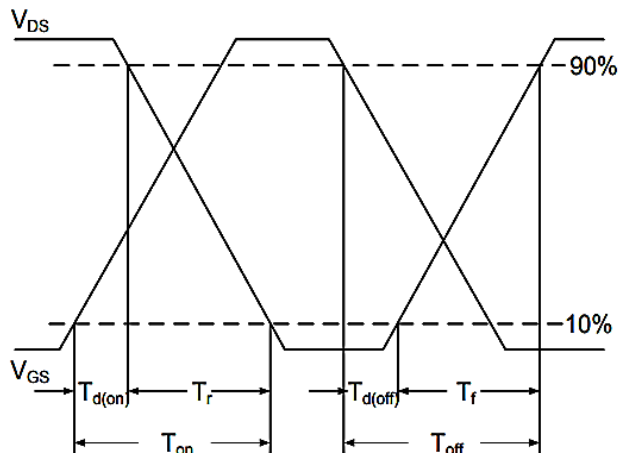
ELECTRICAL CHARACTERISTICS

Off Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	600	--	--	V
Drain-Source Leakage Current	$V_{DS}=600V, V_{GS}=0V$	I_{DSS}	--	--	1	μA
Gate-Body Leakage Current, Forward	$V_{GS}=30V, V_{DS}=0V$	I_{GSSF}	--	--	100	nA
Gate-Body Leakage Current, Reverse	$V_{GS}=-30V, V_{DS}=0V$	I_{GSSR}	--	--	-100	nA
On Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=30A$	$R_{DS(ON)}$	--	0.24	0.28	Ω
Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	$V_{GS(th)}$	2.5	--	4.5	V
Dynamic Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Total Gate Charge	$V_{DS}=400V, V_{GS}=10V, I_D=1A$	Q_g	--	25	--	nC
Gate-Source Charge		Q_{gs}	--	4	--	nC
Gate-Drain Charge		Q_{gd}	--	12	--	nC
Turn-On Delay Time	$V_{DD}=400V, V_{GS}=15V, R_G=10\Omega$ $I_D=7.5A$	$T_{d(on)}$	--	26	--	ns
Rise Time		T_r	--	7	--	ns
Turn-Off Delay Time		$T_{d(off)}$	--	82	--	ns
Fall Time		T_f	--	10	--	ns
Input Capacitance	$V_{DS}=150V, V_{GS}=0V, F=1MHz$	C_{iss}	--	870	--	pF
Output Capacitance		C_{oss}	--	65	--	pF
Reverse Transfer Capacitance		C_{rss}	--	10	--	pF
Drain-Source Body Diode	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Diode Forward Current	--	I_S	--	--	15	A
Diode Forward Voltage	$V_{GS}=0V, I_S=57A, T_J=25^\circ C$	V_{SD}	--	--	1.2	V
Reverse Recovery Time	$I_D = 7.5A, di/dt = 100A/\mu s$	T_{rr}	--	253	--	ns
Reverse Recovery Charge		Q_{rr}	--	2.71	--	μC
Peak Reverse Recovery Current		I_{rr}	--	17.7	--	A

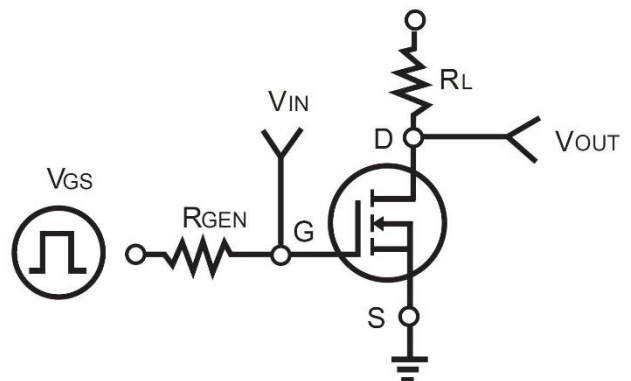
Note:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
3. Guaranteed by design, not subject to production testing.
4. Pulse width limited by safe operating area .
5. L=50mH, $I_{AS} = 4A, V_{DD}= 50V, R_G=25\Omega$, Starting $T_J=25^\circ C$

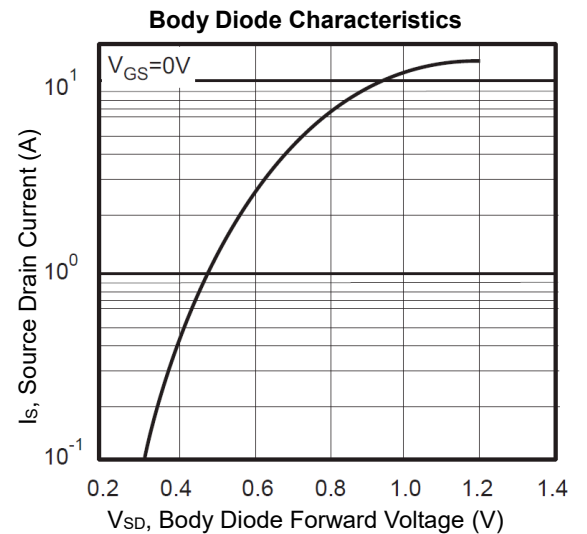
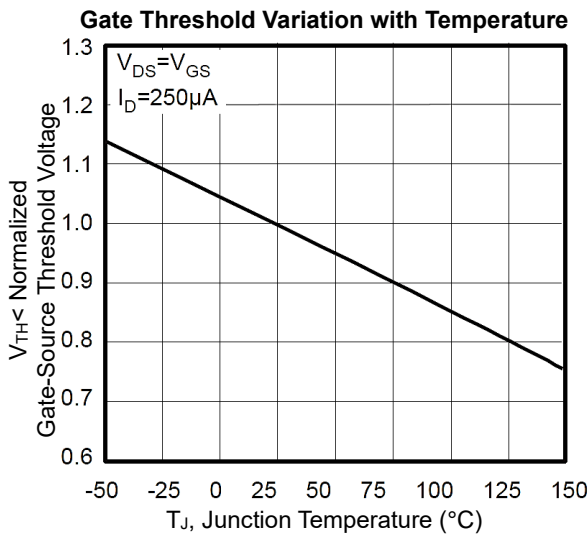
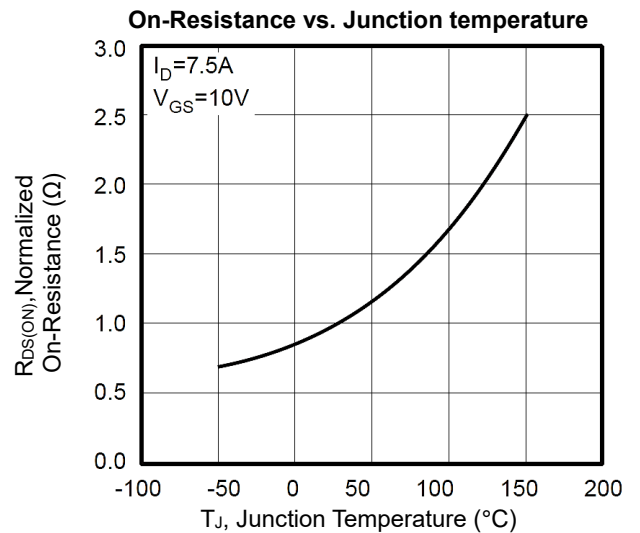
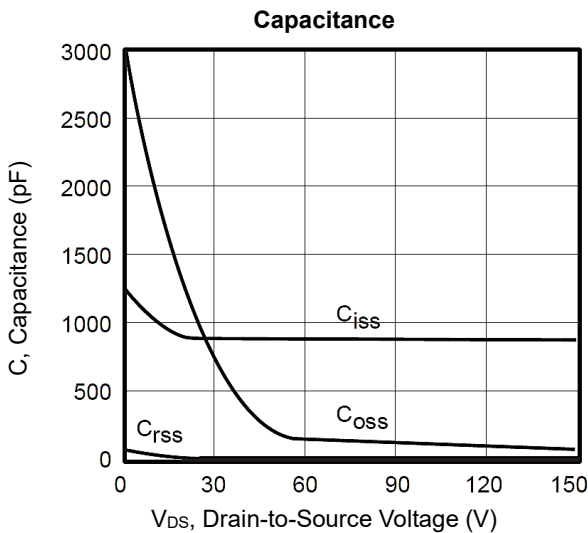
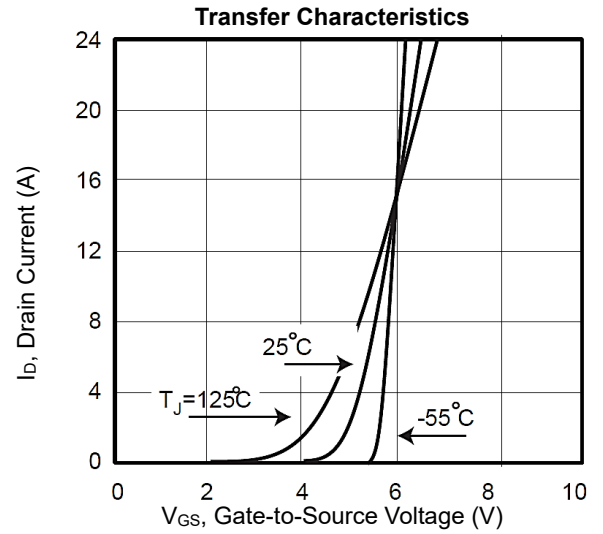
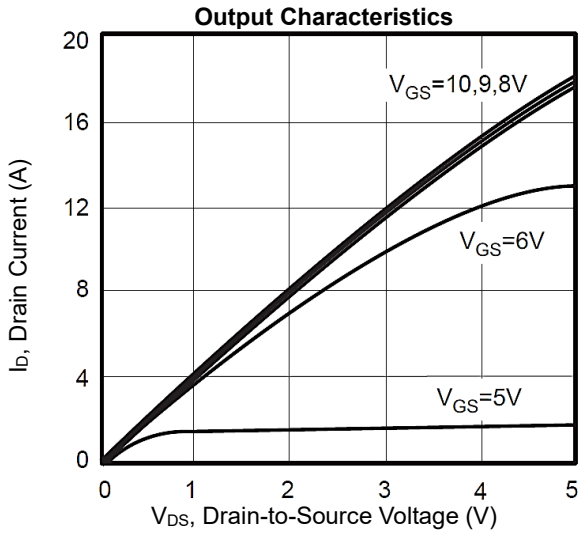
Switching Time Waveform



Switching Test Circuit



CHARACTERISTIC CURVES



CHARACTERISTIC CURVES

