

N-Channel MOSFET

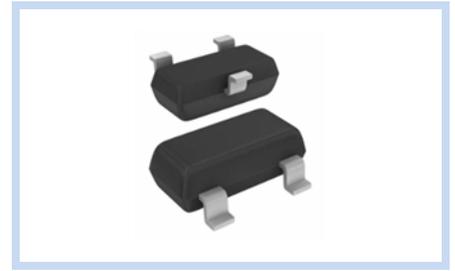
60V 320mA 310mW SOT-323 ESD

MFT6NA32S323E

MERITEK

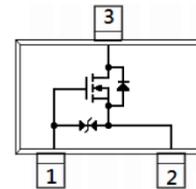
FEATURE

- $R_{DS(ON)} < 1.6\Omega$, $V_{GS}=10V$, $I_D=320mA$
- $R_{DS(ON)} < 2.2\Omega$, $V_{GS}=4.5V$, $I_D= 200mA$
- $R_{DS(ON)} < 6.5\Omega$, $V_{GS}=2.5V$, $I_D= 10mA$
- Advanced Trench Pcess technology
- For Low Voltage, Low Current, Switch Application
- ESD Protected 2KV HBM



MECHANICAL DATA

- Case: SOT-323 Package
- Terminals: Solderable per MIL-STD-750, Method 2026

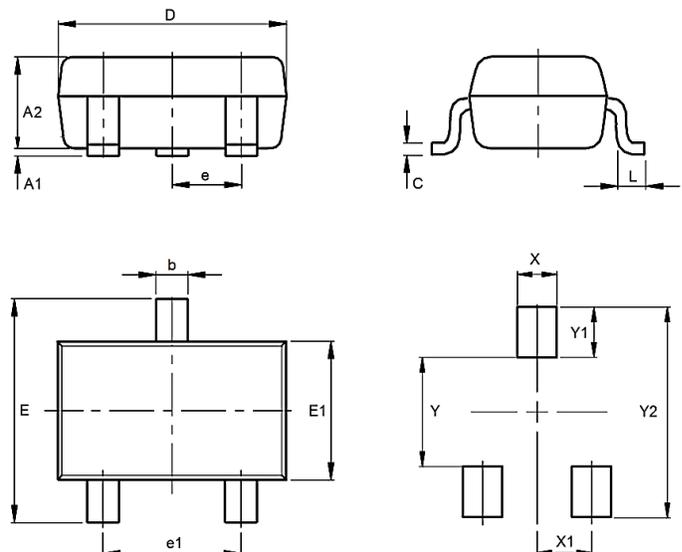


MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current – Continuous	I_D	$T_A=25^\circ C$	320
		$T_A=100^\circ C$	210
Drain Current – Pulsed	I_{DM}	1.2	A
Power Dissipation	P_D	Note 3	260
		Note 2	310
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	Note 3	480
		Note 2	400
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ C$

DIMENSIONS

Item	Min (mm)	Max (mm)
A1	0.00	0.10
A2	0.79	1.10
b	0.20	0.40
c	0.05	0.25
D	1.80	2.20
e	0.65 TYP	
e1	1.20	1.40
E	2.00	2.45
E1	1.15	1.35
L	0.10	--
X	0.80	
X1	0.65	
Y	0.80	
Y1	0.80	
Y2	2.40	



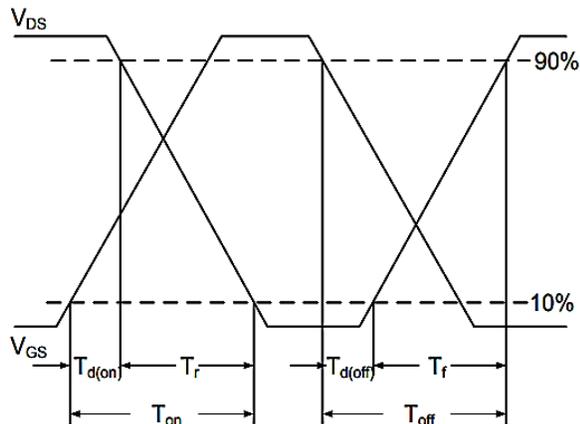
ELECTRICAL CHARACTERISTICS

Off Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	60	--	--	V
Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	$V_{GS(th)}$	0.48	--	1.6	V
Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}	--	--	± 10	μA
	$V_{DS}=0V, V_{GS}=\pm 10V$		--	--	± 1	
Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$	I_{DSS}	--	--	1	μA
On Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=320mA$	$R_{DS(ON)}$	--	--	1.6	Ω
	$V_{GS}=4.5V, I_D=200mA$		--	--	2.2	
	$V_{GS}=2.5V, I_D=10mA$		--	--	6.5	
Dynamic Characteristics	Conditions	Symbol	--	Typ.	Max	Unit
Input Capacitance	$V_{DS}=10V, V_{GS}=0V, F=1.0MHz$	C_{iss}	--	--	56	pF
Output Capacitance	$V_{DS}=15V, V_{GS}=0V, F=1.0MHz$	C_{oss}	--	7	--	
Reverse Transfer Capacitance		C_{rss}	--	4	--	
Turn-On Delay Time	$V_{DS}=40V, R_L=250\Omega, V_{GS}=10V, R_G=25\Omega$	$T_{d(on)}$	--	--	10	nS
Rise Time		T_r	--	5	--	
Turn-Off Delay Time		$T_{d(off)}$	--	--	76	
Fall Time		T_f	--	20	--	
Total Gate Charge	$V_{DS}=10V, V_{GS}=4.5V, I_D=250mA$	Q_g	--	0.44	--	nC
Gate-Source Charge		Q_{gs}	--	0.20	--	
Gate-Drain Charge		Q_{gd}	--	0.10	--	
Drain-Source Body Diode	Conditions	Symbol	Min	Typ.	Max	Unit
Diode Forward Voltage	$I_S=500mA, V_{GS}=0V$	V_{SD}	0.47	--	1.2	V
Forward Transconductance	$V_{DS}=10V, I_D=200mA$	g_{FS}	--	700	--	mS

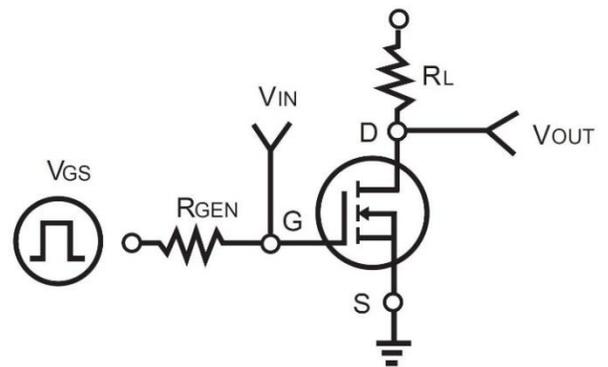
Note:

- $T_A = 25^\circ C$ unless otherwise noted.
- Device mounted on FR-4 PCB, single-sided copper, tin-plated mounting pad for drain 1 cm^2
- Device mounted on FR-4 PCB, single-sided copper, tin-plated and standard footprint.

Switching Time Waveform

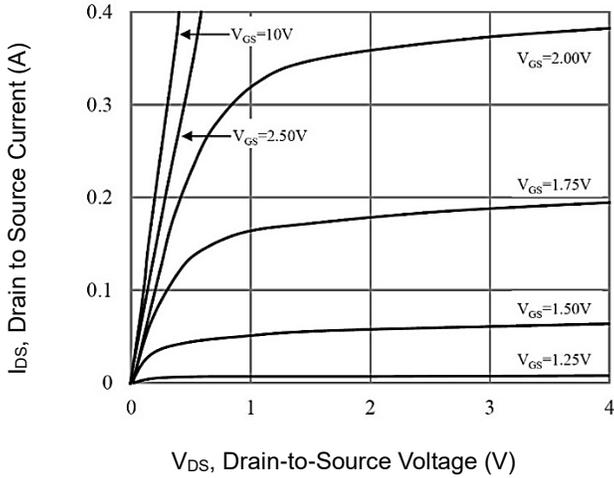


Switching Test Circuit

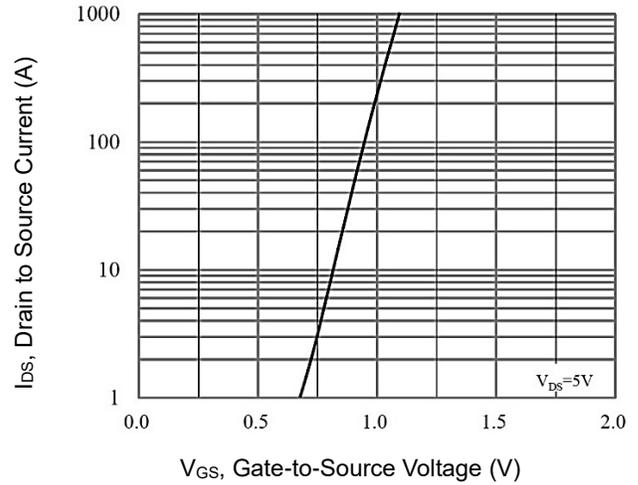


CHARACTERISTIC CURVES

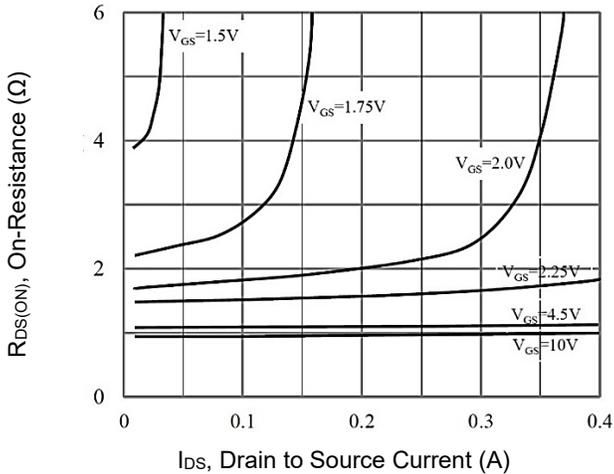
On Region Characteristics



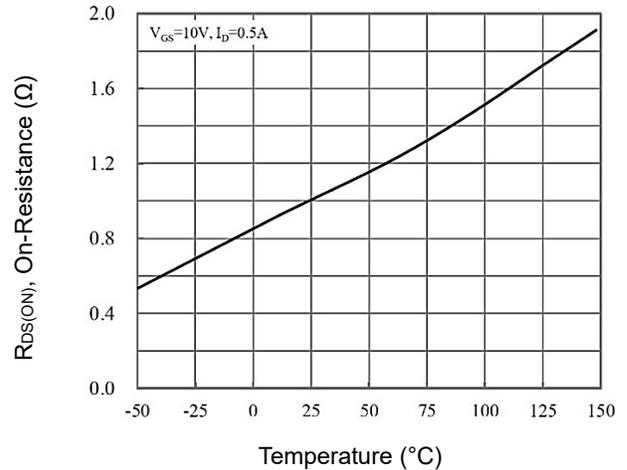
Transfer Characteristics



On-Resistance vs. Drain Current



On-Resistance vs. Junction Temperature



On-Resistance Variation with Vgs

