

P-Channel MOSFET

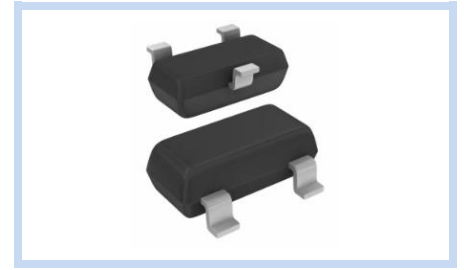
50V 0.13A 0.25W SOT-23

MFT5PA13S23

MERITEK

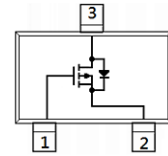
FEATURE

- $R_{DS(ON)} \leq 10\Omega$, $V_{GS} = -10V$
- Low Threshold Voltage
- High-Speed Switching
- Low Input/Output Leakage
- Application: Power Management Function, Analog Switches, Relay Driver, High-Side Loadswitch, Switching Circuits



MECHANICAL DATA

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

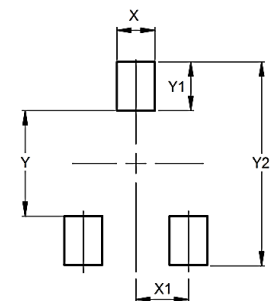
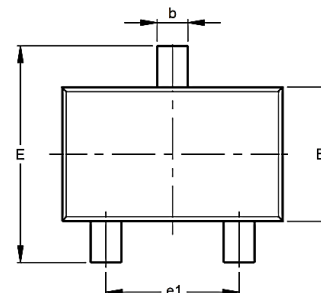
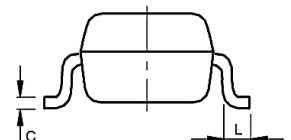
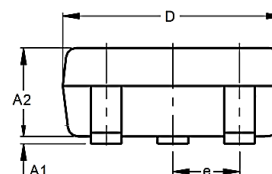


MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-50	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current – Continuous	I_D	-130	mA
Drain Current – Pulsed	I_{DM}	-520	mA
Power Dissipation	P_D	250	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	500	$^{\circ}C / W$
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	1.40
b	0.30	0.50
C	0.08	0.20
D	2.70	3.10
e	0.95	
e1	1.78	2.04
E	2.10	2.80
E1	1.20	1.60
L	0.15	--
X	0.80	
X1	0.95	
Y	1.10	
Y1	0.90	
Y2	2.90	



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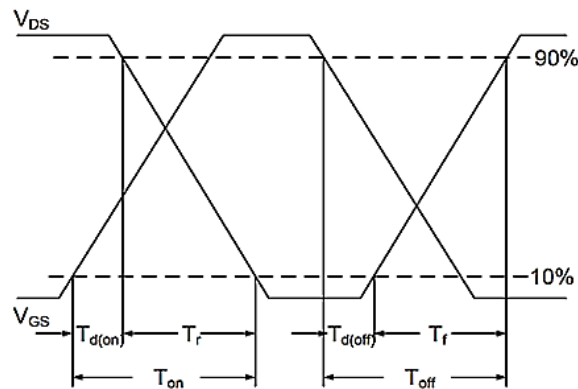
ELECTRICAL CHARACTERISTICS

Off Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D = -10\mu A$	BV_{DSS}	-50	--	--	V
Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D = -1mA$	$V_{GS(th)}$	-0.8	--	-2.0	V
Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}	--	--	± 10	nA
Zero Gate Voltage Drain Current	$V_{DS} = -40V, V_{GS}=0V$	I_{DSS}	--	--	-0.1	μA
	$V_{DS} = -50V, V_{GS}=0V$		--	--	-10	
	$V_{DS} = -50V, V_{GS}=0V, T_J = 125^\circ C$		--	--	-60	
On Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Static Drain-Source On-Resistance	$V_{GS} = -10V, I_D = -130mA$	$R_{DS(on)}$	--	--	10.0	Ω
Dynamic Characteristics	Conditions	Symbol	--	Typ.	Max	Unit
Input Capacitance	$V_{DS} = -25V, V_{GS} = 0V, F = 1.0MHz$	C_{iss}	--	--	45	pF
Output Capacitance		C_{oss}	--	--	25	
Reverse Transfer Capacitance		C_{rss}	--	--	12	
Turn-On Delay Time	$V_{DD} = -40V, I_D \cong -200mA,$ $V_{GS} = 0 \text{ to } -10V$	$T_{d(on)}$	--	3	--	nS
Turn-Off Delay Time		$T_{d(off)}$	--	7	--	

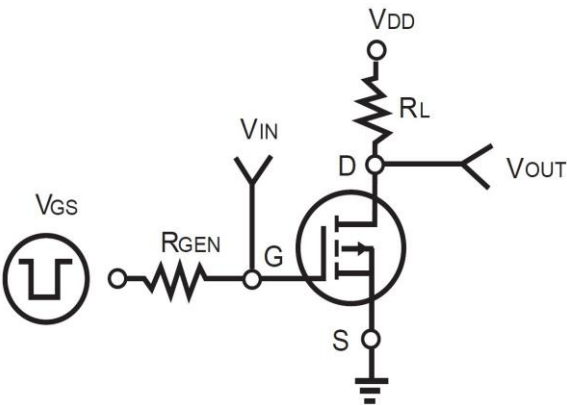
Note:

1. $T_A = 25^\circ C$ unless otherwise specified.
2. Device mounted on a printed-circuit board.

Switching Time Waveform

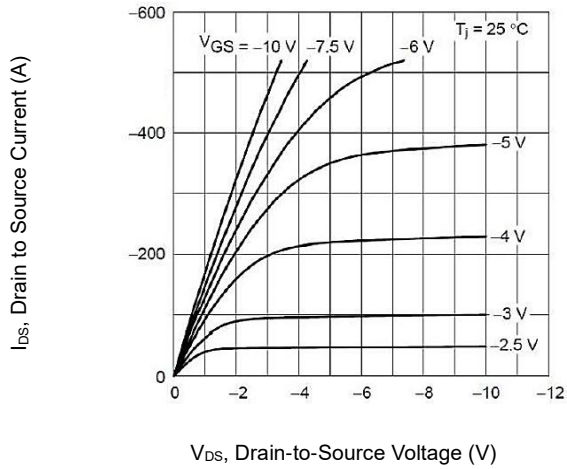


Switching Test Circuit

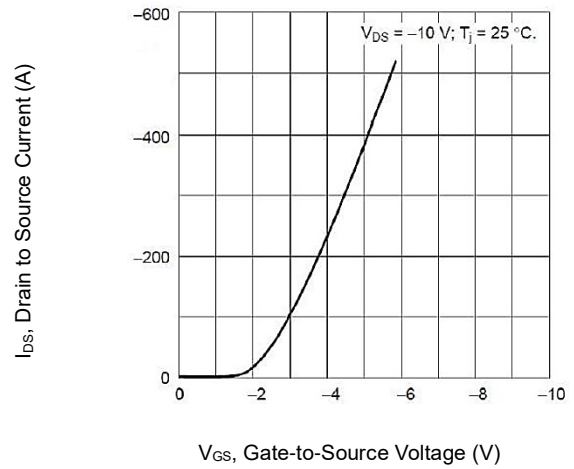


CHARACTERISTIC CURVES

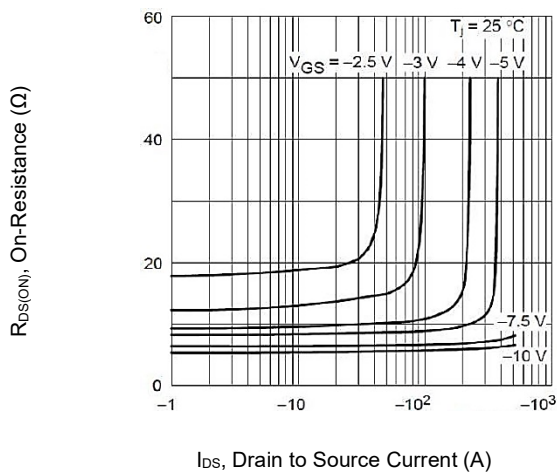
On Region Characteristics



Transfer Characteristics



On-Resistance vs. Drain Current



Power Derating Curve

