

2P Channel MOSFET

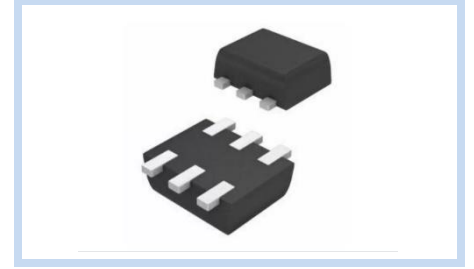
-60V -0.25A SOT-563 ESD AECQ

MFT62PA25S563EA

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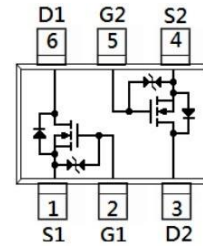
FEATURE

- $R_{DS(ON)} < 5\Omega$, $V_{GS} = -10V$, $I_D = -200mA$
- $R_{DS(ON)} < 6\Omega$, $V_{GS} = -4.5V$, $I_D = -100mA$
- $R_{DS(ON)} < 8\Omega$, $V_{GS} = -2.5V$, $I_D = -100mA$
- Advanced Trench Process Technology
- ESD Protected 2KV HBM
- AEC-Q101 qualified



MECHANICAL DATA

- Case: SOT-563 Package
- Terminals: Solderable per MIL-STD-750, Method 2026

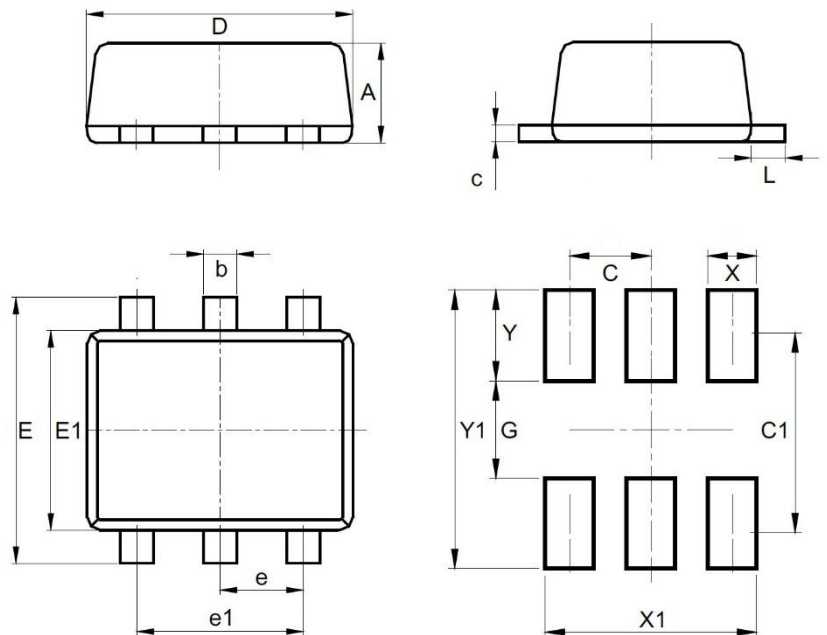


MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current – Continuous	I_D	-250	mA
Drain Current – Pulsed	I_{DM}	-1	A
Power Dissipation	P_D	350	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}C/W$
Operating Junction and Storage Temperature	T_J, T_{STG}	-55 to +150	$^{\circ}C$

DIMENSIONS

Item	Min (mm)	Max (mm)
A	0.20	0.10
b	0.30	0.10
c	0.07	0.17
D	1.50	1.70
E	1.30	1.10
E1	1.70	1.50
e	0.60	0.50
e1	1.00	--
L	0.10	0.30
X	0.30	
X1	1.30	
Y	0.85	
Y1	2.30	
C	0.50	
C1	1.45	



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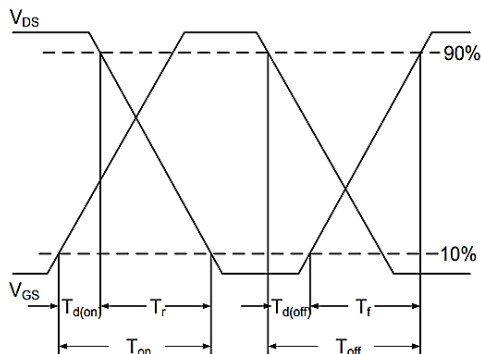
ELECTRICAL CHARACTERISTICS

Off Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	BV_{DSS}	-60	--	--	V
Drain-Source Leakage Current	$V_{DS}=-48V, V_{GS}=0V,$	I_{DSS}	--	--	-1	μA
Gate-Source Leakage Current	$V_{GS}=\pm 16V, V_{DS}=0V$	I_{GSS}	--	--	± 10	μA
On Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Static Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-200mA$	$R_{DS(ON)}$	--	--	5	Ω
	$V_{GS}=-4.5V, I_D=-100mA$		--	--	6	Ω
	$V_{GS}=-2.5V, I_D=-100mA$		--	--	8	Ω
Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=-250\mu A$	$V_{GS(th)}$	-0.8	--	-2.0	V
Dynamic Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Total Gate Charge	$V_{DS}=-25V, V_{GS}=-4.5V, I_D=-100mA$	Q_g	--	1.1	--	nC
Gate-Source Charge		Q_{gs}	--	0.3	--	nC
Gate-Drain Charge		Q_{gd}	--	0.2	--	nC
Turn-On Delay Time	$V_{DD}=-25V, V_{GS}=-10V, R_G=6.8\Omega$ $I_D=-100mA,$	$T_{d(on)}$	--	14	--	ns
Rise Time		T_r	--	4	--	ns
Turn-Off Delay Time		$T_{d(off)}$	--	15	--	ns
Fall Time		T_f	--	77	--	ns
Input Capacitance		$V_{DS}=-30V, V_{GS}=0V, F=1MHz$	C_{iss}	--	38	--
Output Capacitance	C_{oss}		--	9	--	pF
Reverse Transfer Capacitance	C_{rss}		--	6	--	pF
Drain-Source Body Diode	Conditions	Symbol	Min	Typ.	Max	Unit
Diode Forward Current	--	I_S	--	--	-250	mA
Diode Forward Voltage	$V_{GS}=0V, I_S=-200mA, T_J=25^\circ C$	V_{SD}	--	--	-1.2	V

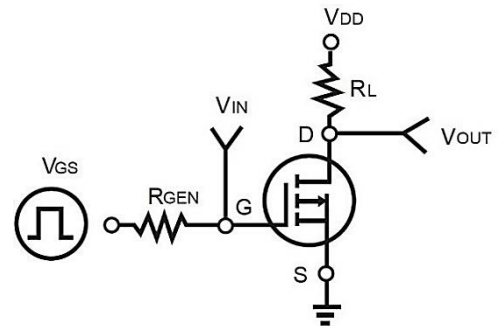
Note:

1. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
2. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout

Switching Time Waveform



Switching Test Circuit



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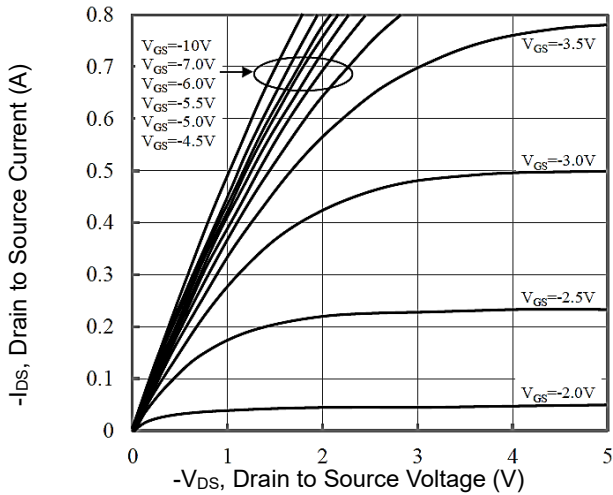
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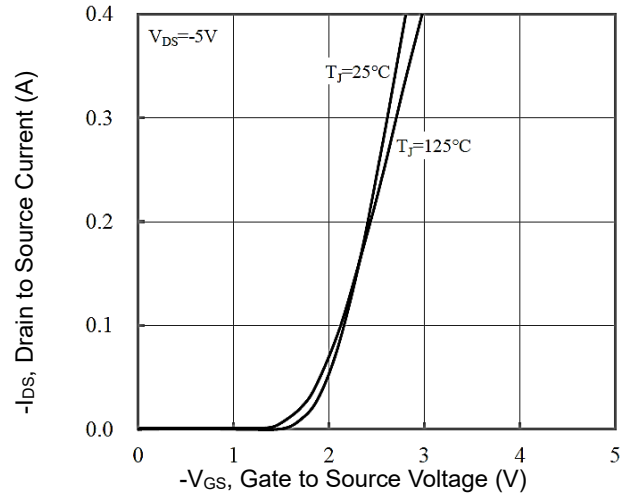
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CHARACTERISTIC CURVES

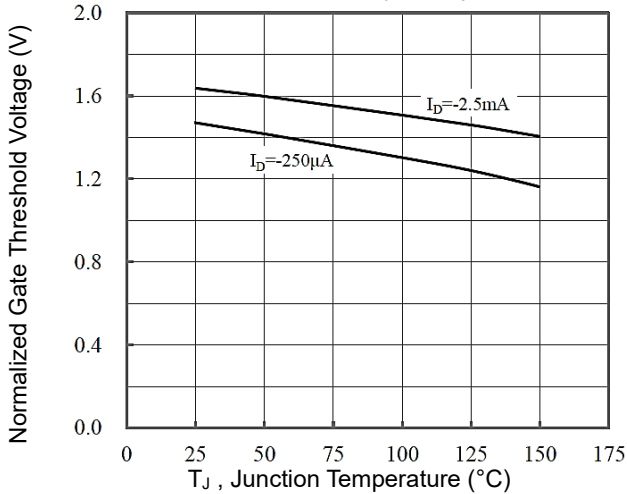
On-Region Characteristics



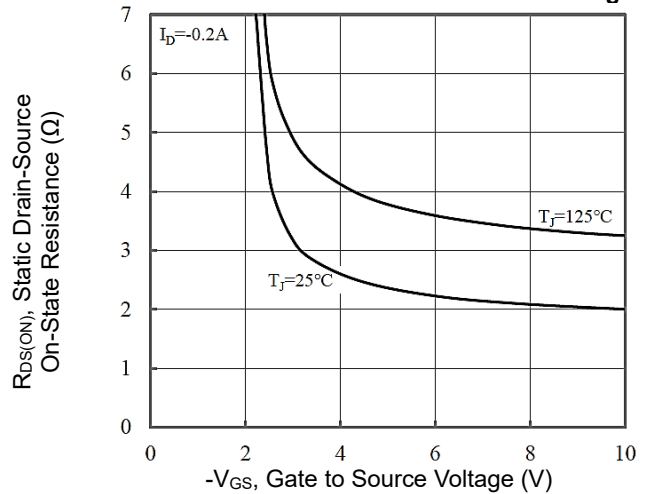
Transfer Characteristics



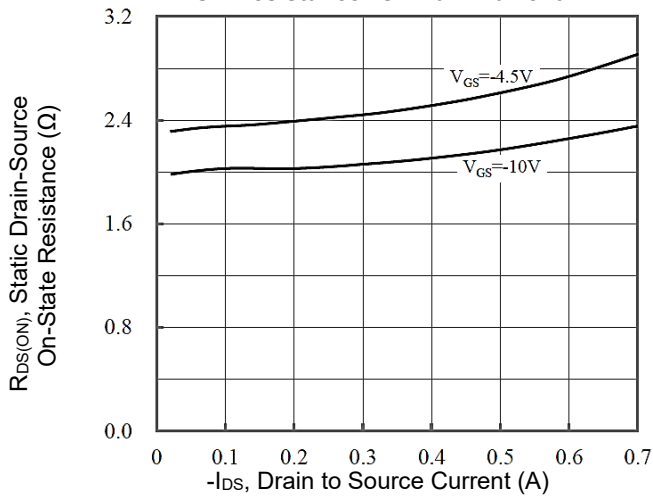
Normalized V_{th} vs. T_J



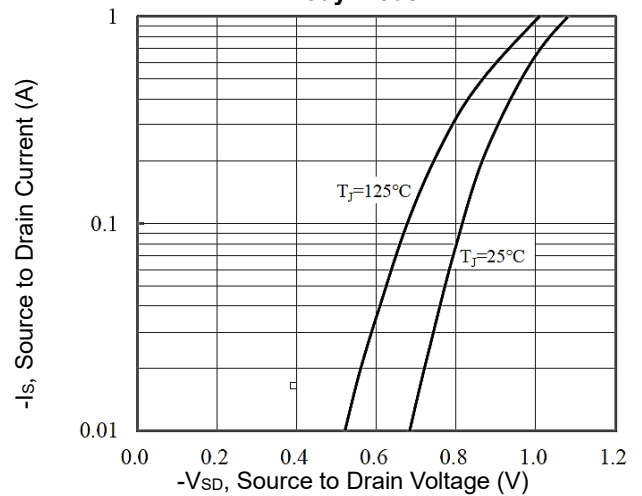
On-State Resistance vs Gate-Source Voltage



On-Resistance vs. Drain Current



Body Diode



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