

2P Channel MOSFET

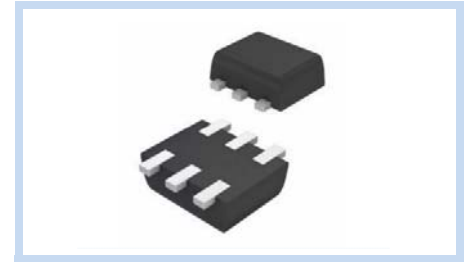
60V 0.25A SOT-563 ESD AECQ

MFT62PA35S563EA

MERITEK

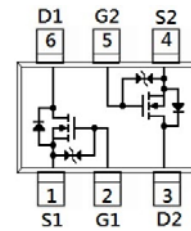
FEATURE

- $R_{DS(ON)} < 5\Omega$, $V_{GS} = -10V$, $I_D = -200mA$
- $R_{DS(ON)} < 6\Omega$, $V_{GS} = -4.5V$, $I_D = -100mA$
- $R_{DS(ON)} < 8\Omega$, $V_{GS} = -2.5V$, $I_D = -100mA$
- 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

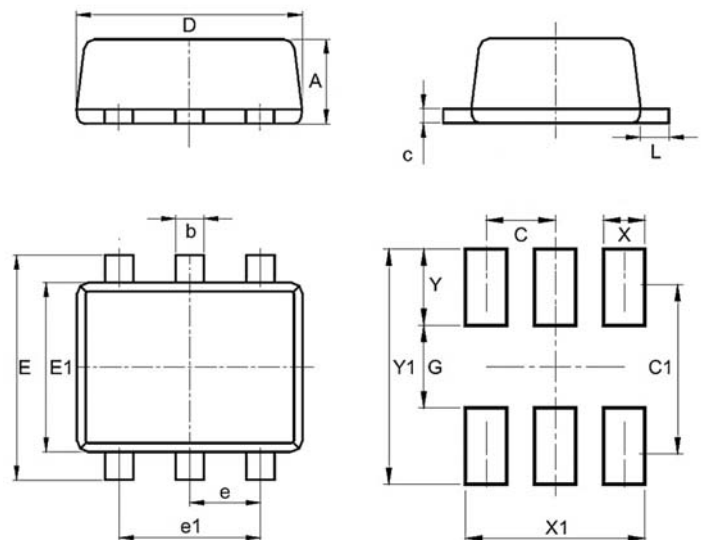
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current – Continuous	I_D	-250	mA
Drain Current – Pulsed	I_{DM}	-1	A
Power Dissipation	P_D	350	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}C/W$
Operating Junction and Storage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

Note:

1. Surface mounted on FR-4 board, with minimum recommended pad layout.
2. $T_A = 25^{\circ}C$ unless otherwise noted

DIMENSIONS

Item	Min (mm)	Max (mm)
A	0.50	0.60
b	0.17	0.27
c	0.07	0.17
D	1.50	1.70
E	1.50	1.70
E1	1.10	1.30
e	0.45	0.55
e1	0.90	1.10
L	0.10	0.30
X		0.34
X1		1.34
Y		0.55
Y1		2.00
C		0.50
C1		1.45
G		0.90



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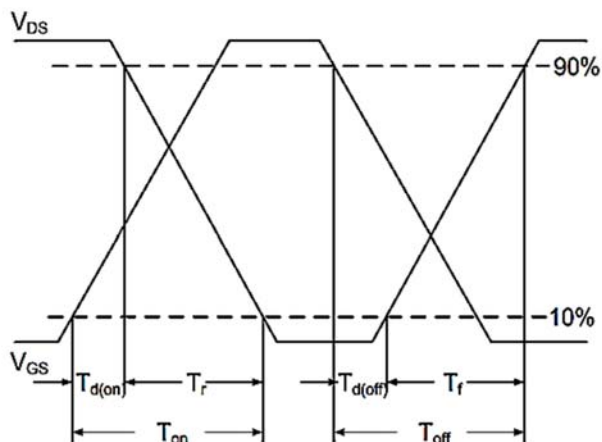
ELECTRICAL CHARACTERISTICS

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	
	$V_{GS}=-2.5V, I_D=-100mA$		--	--	8	
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	$V_{DS}=-25V, V_{GS}=-4.5V, I_D=-0.1A$	Q_G	--	1.1	--	nC
Gate-Source Charge		Q_{GS}	--	0.3	--	
Gate-Drain Charge		Q_{GD}	--	0.2	--	
Turn-On Delay Time	$V_{DD}=-25V, V_{GS}=-10V, R_G=6.8\Omega, I_D=-0.1A,$	$T_{d(on)}$	--	14	--	ns
Rise Time		T_r	--	4	--	
Turn-Off Delay Time		$T_{d(off)}$	--	15	--	
Fall Time		T_f	--	77	--	
Input Capacitance	$V_{DS}=-30V, V_{GS}=0V, F=1MHz$	C_{iss}	--	38	--	pF
Output Capacitance		C_{oss}	--	9	--	
Reverse Transfer Capacitance		C_{rss}	--	6	--	
Drain-Source Body Diode	Conditions	Symbol	Min	Typ.	Max	Unit
Diode Forward Current	-	I_S	--	--	-250	mA
Diode Forward Voltage	$V_{GS}=0V, I_S=-0.2A, T_J=25^\circ C$	V_{SD}	--	--	-1.2	V

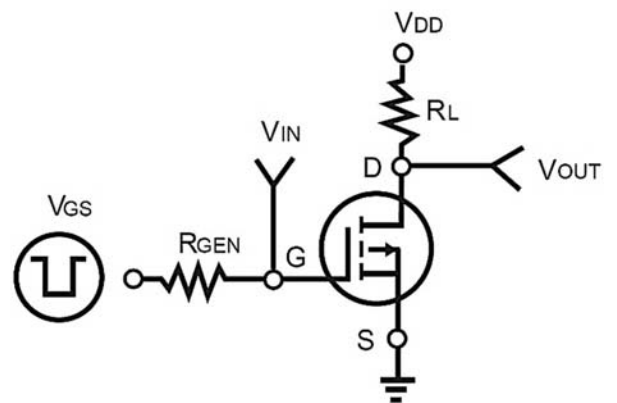
Note:

1. Pulse widths $\leq 300\mu s$, duty cycles $\leq 2\%$
2. Essentially independent of operating temperature typical characteristics
3. $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. mounted on a 1 inch square pad of copper
4. The maximum current rating is package limited

Switching Time Waveform



Switching Test Circuit



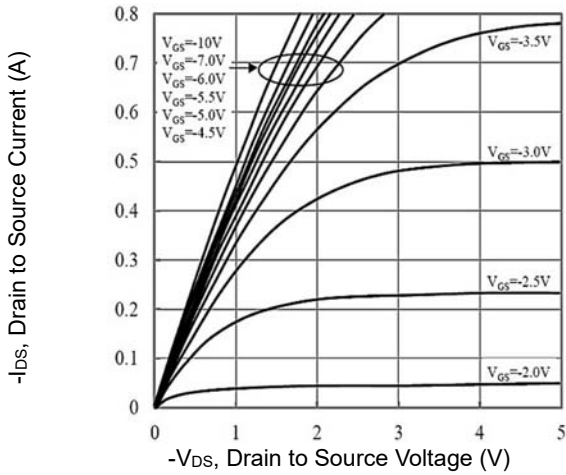
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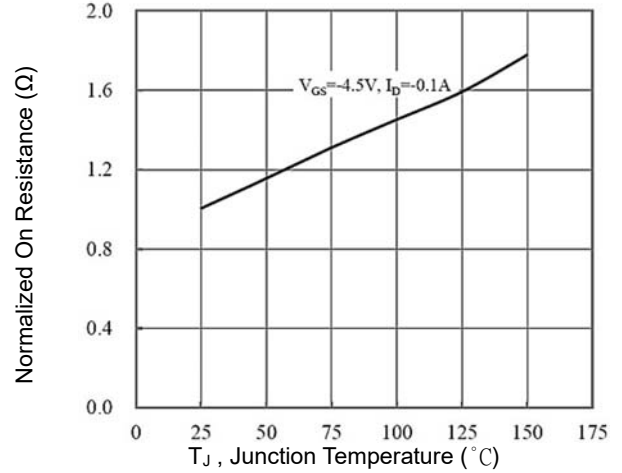
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CHARACTERISTIC CURVES

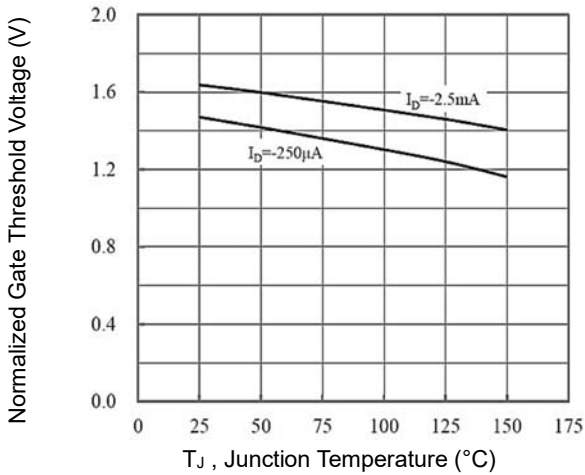
On-Region Characteristics



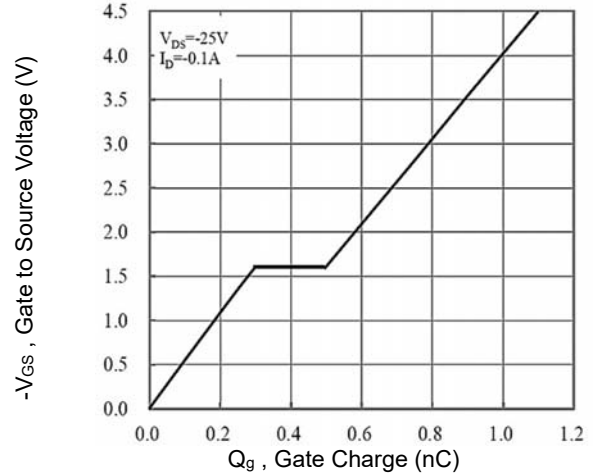
Normalized $R_{DS(ON)}$ vs. T_J



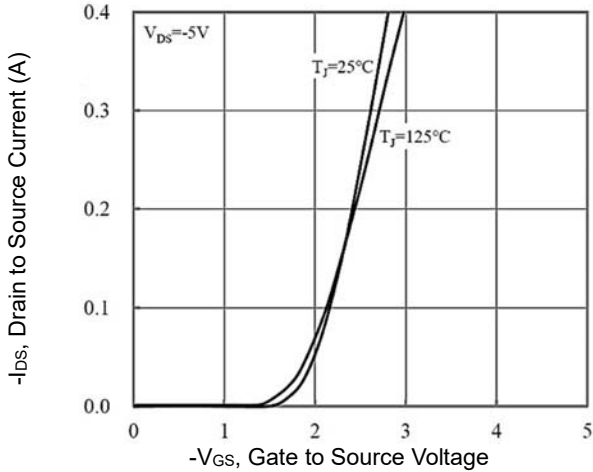
Normalized V_{th} vs. T_J



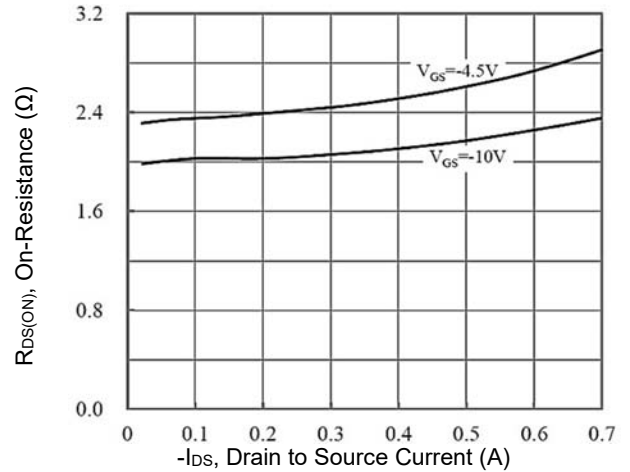
Gate Charge Waveform



Transfer Characteristics



On-Resistance vs. Drain Current



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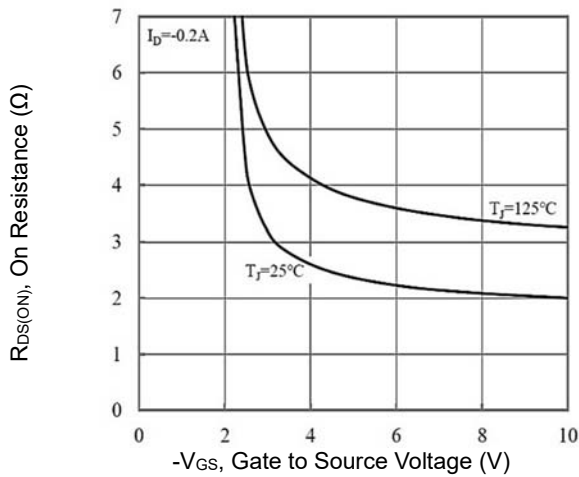
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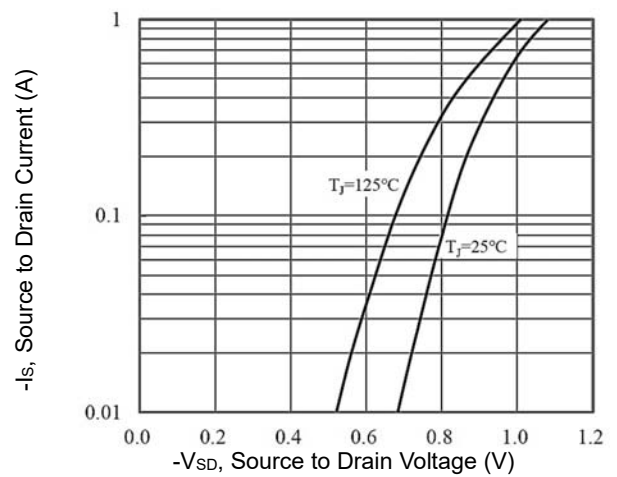
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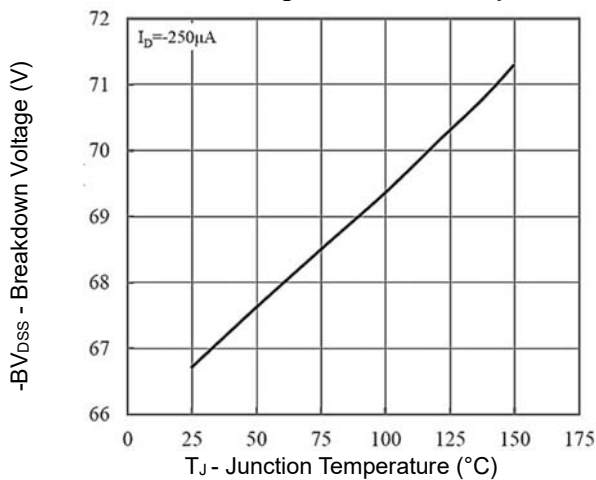
On-Resistance Variation with VGS



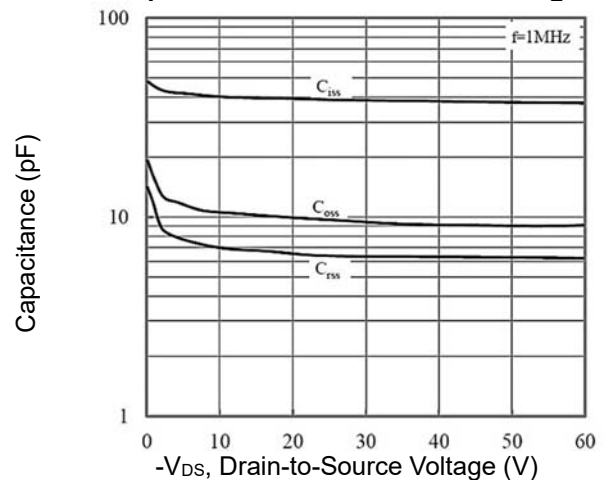
Body Diode



Breakdown Voltage vs Junction Temperature



Capacitance vs. Drain-Source Voltage



Leakage Current vs Temperature

