

N-Channel MOSFET

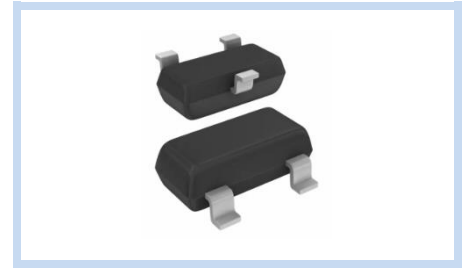
100V 200mA 0.35W SOT-23

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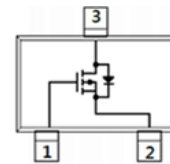
FEATURE

- $R_{DS(ON)} \leq 5\Omega$, $V_{GS}=10V$
- $R_{DS(ON)} \leq 5.5\Omega$, $V_{GS}=4.5V$
- Voltage Controlled Small Signal Switch
- Applications: Small Servo Motor Controls, Power MOSFET Gate Drivers, and Switching Application



MECHANICAL DATA

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

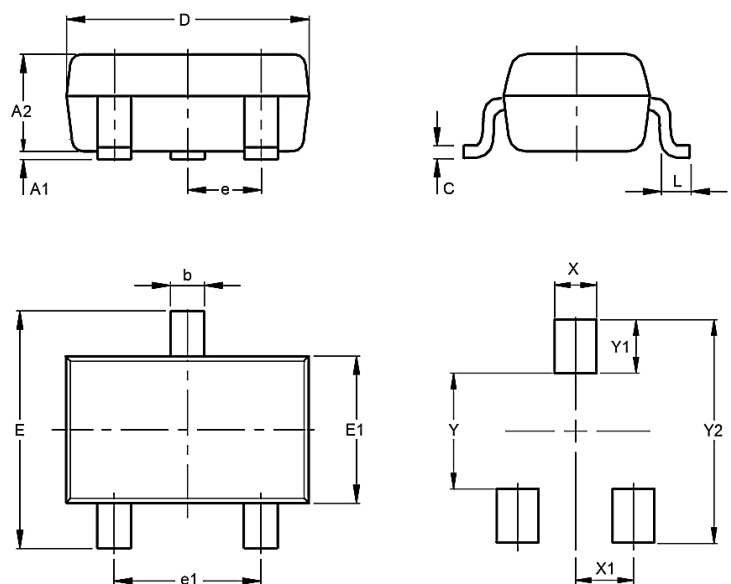


MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current – Continuous	I_D	200	mA
Drain Current – Pulsed	I_{DM}	800	mA
Power Dissipation	P_D	350	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	375	$^{\circ}C / W$
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	0.90	1.05
b	0.30	0.50
c	0.08	0.20
D	2.80	3.00
e	0.95 TYP	
e1	1.80	2.00
E	2.25	2.55
E1	1.20	1.40
L	0.30	0.50
X	0.80	
X1	0.95	
Y	1.10	
Y1	0.90	
Y2	2.90	



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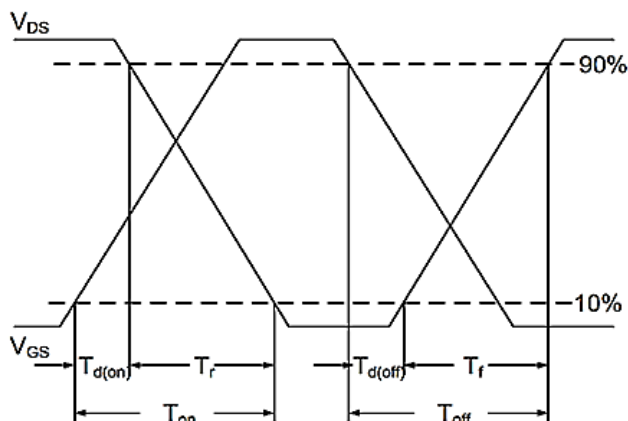
ELECTRICAL CHARACTERISTICS

Off Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	100	--	--	V
Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	$V_{GS(th)}$	1.0	--	2.5	V
Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}	--	--	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0V$	I_{DSS}	--	--	1	μA
On Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=200mA$	$R_{DS(on)}$	--	--	5	Ω
	$V_{GS}=4.5V, I_D=175mA$		--	--	5.5	
Dynamic Characteristics	Conditions	Symbol	--	Typ.	Max	Unit
Input Capacitance	$V_{DS}=50V, V_{GS}=0V, F=1MHz$	C_{iss}	--	14	--	pF
Output Capacitance		C_{oss}	--	10	--	
Reverse Transfer Capacitance		C_{rss}	--	5	--	
Turn-On Delay Time	$V_{DD}=50V, I_D \cong 200mA, V_{GS}=10V, R_G=6\Omega$	$T_{d(on)}$	--	1.7	--	nS
Rise Time		T_r	--	9	--	
Turn-Off Delay Time		$T_{d(off)}$	--	17	--	
Fall Time		T_f	--	7	--	
Total Gate Charge	$V_{DS}=50V, V_{GS}=10V, I_D \cong 200mA$	Q_g	--	1.8	--	nC
Drain-Source Body Diode	Conditions	Symbol	Min	Typ.	Max	Unit
Diode Forward Current	--	I_S	--	--	0.2	A
Diode Forward Voltage	$I_S=200mA, V_{GS}=0V$	V_{SD}	--	--	1.2	V

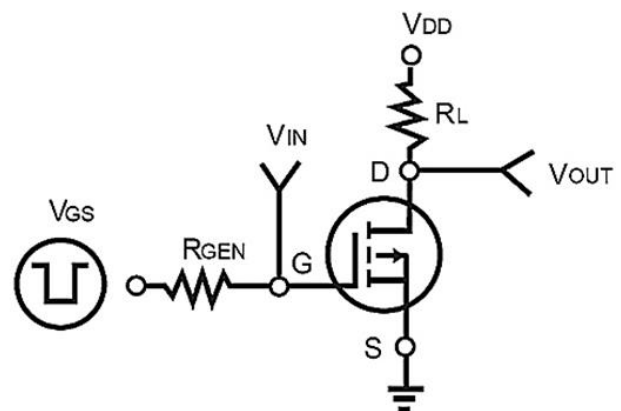
Note:

1. $T_A=25^\circ C$, unless otherwise noted
2. Pulse width<300 μs , Duty cycle<2%

Switching Time Waveform



Switching Test Circuit



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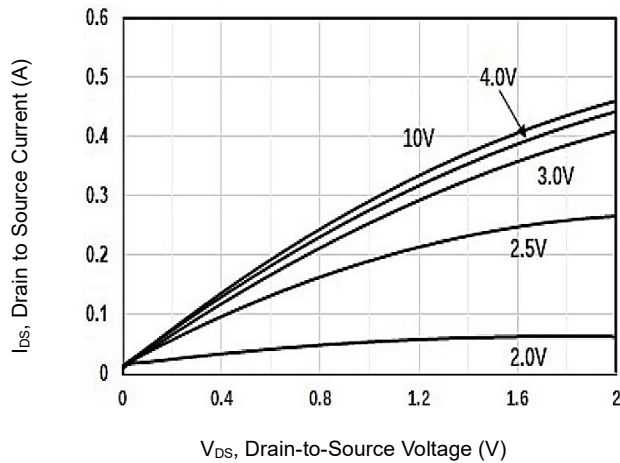
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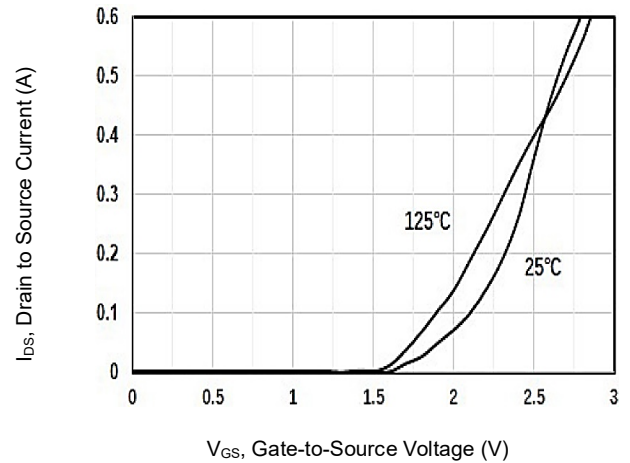
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CHARACTERISTIC CURVES

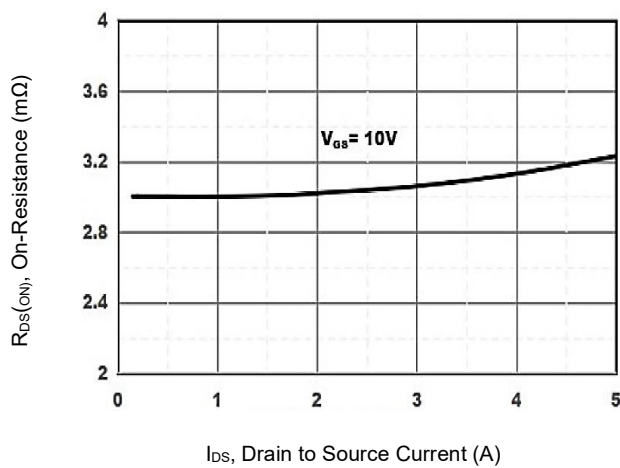
On Region Characteristics



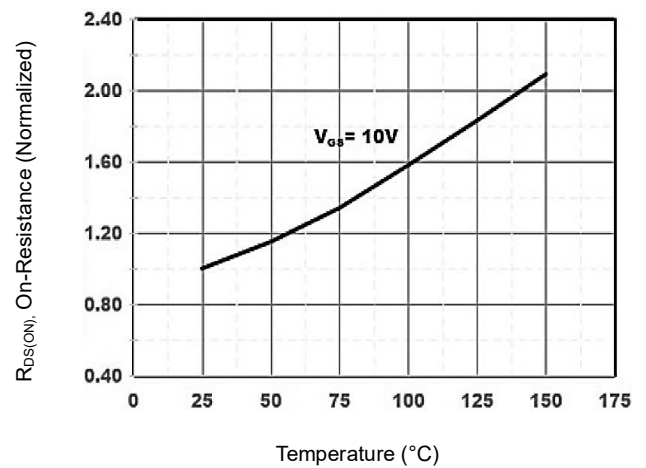
Transfer Characteristics



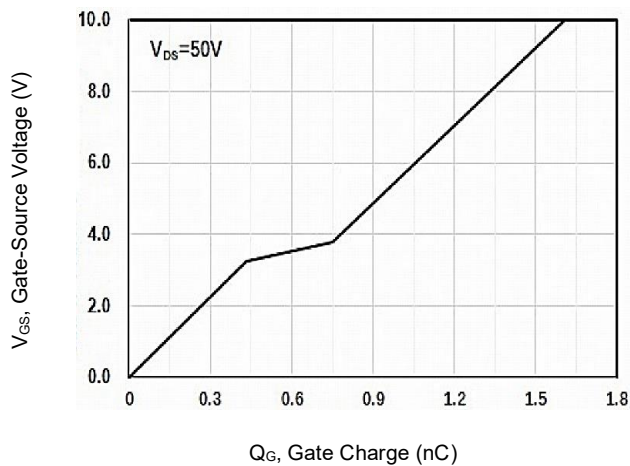
On-Resistance vs. Drain Current



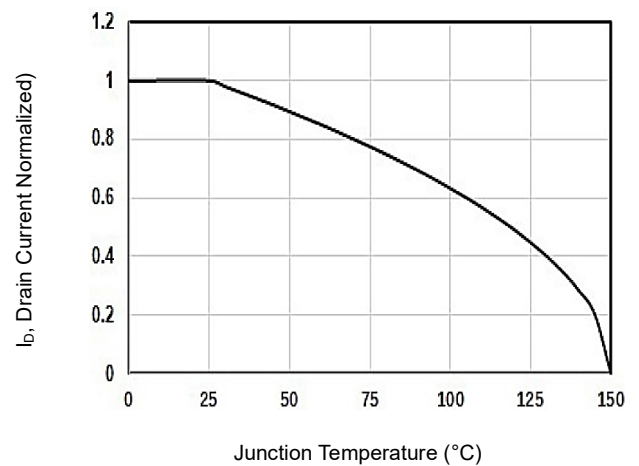
On-Resistance vs. Junction Temperature



Gate Charge



Drain Current



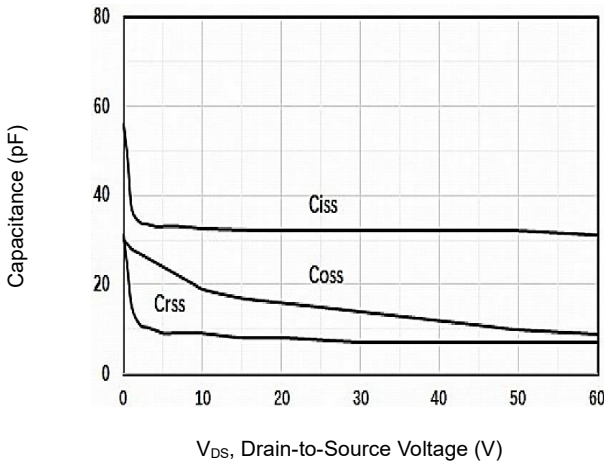
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CHARACTERISTIC CURVES

Capacitance vs. Drain-Source Voltage



Safe Operating Area

