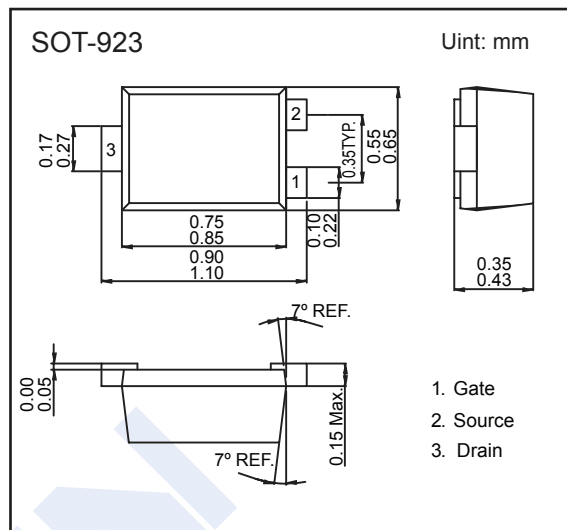
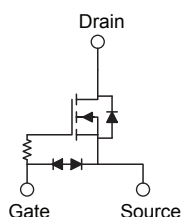


N-Channel MOSFET

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■ Features

- $V_{DS} (V) = 20V$
- $I_D = 0.71 A$
- $R_{DS(ON)} < 0.42\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 0.500\Omega$ ($V_{GS} = 2.5V$)
- $R_{DS(ON)} < 0.60\Omega$ ($V_{GS} = 1.8V$)



■ Absolute Maximum Ratings

Parameter		Symbol	10 S	Steady State	Unit
Drain-Source Voltage		V _{DS}	20		V
Gate-Source Voltage		V _{GS}	±5		
Continuous Drain Current ^{a d}	T _A =25℃	I _D	0.71	0.66	A
	T _A =70℃		0.57	0.52	
Maximum Power Dissipation ^{a d}	T _A =25℃	P _D	0.32	0.27	W
	T _A =70℃		0.20	0.17	
Continuous Drain Current ^{b d}	T _A =25℃	I _D	0.67	0.62	A
	T _A =70℃		0.54	0.50	
Maximum Power Dissipation ^{b d}	T _A =25℃	P _D	0.28	0.24	W
	T _A =70℃		0.18	0.15	
Pulsed Drain Current ^c		I _{DM}	1.4		A
Thermal Resistance.Junction- to-Ambient ^a		R _{thJA}	390	455	℃/W
Thermal Resistance.Junction- to-Ambient ^b		R _{thJA}	435	505	
Thermal Resistance.Junction- to-Case		R _{thJC}		280	
Junction Temperature		T _J	150		℃
Storage Temperature Range		T _{stg}	-55 to 150		

a. Surfacemounted on FR4 Board using 1square inchpad size, 1ozcopper

b. Surface mounted on FR4 board using minimum pad size, 1oz copper

c. Pulse width<380 μ s, Single pulse

d. Maximum junction temperature $T_J = 150^\circ C$.

e. Pulse test: Pulse width <380 us duty cycle <2%.

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■ Electrical Characteristics ($T_a = 25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 5\text{V}$			± 5	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	0.45		0.85	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5\text{V}$, $I_D=0.55\text{A}$			420	$\text{m}\Omega$
		$V_{GS}=2.5\text{V}$, $I_D=0.45\text{A}$			500	
		$V_{GS}=1.8\text{V}$, $I_D=0.35\text{A}$			600	
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V}$, $I_D=0.55\text{A}$		2		S
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=100\text{kHz}$		50.6		pF
Output Capacitance	C_{oss}			13.2		
Reverse Transfer Capacitance	C_{rss}			8.3		
Total Gate Charge	$Q_{g(tot)}$	$V_{GS}=4.5\text{V}$, $V_{DS}=10\text{V}$, $I_D=0.55\text{A}$		0.87		nC
Threshold Gate Charge	$Q_{g(th)}$			0.06		
Gate Source Charge	Q_{gs}			0.15		
Gate Drain Charge	Q_{gd}			0.27		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS}=4.5\text{V}$, $V_{DD}=10\text{V}$, $I_D=0.55\text{A}$, $R_G=6\Omega$		34		ns
Turn-On Rise Time	t_r			97.6		
Turn-Off DelayTime	$t_{d(off)}$			606		
Turn-Off Fall Time	t_f			318		
Diode Forward Voltage	V_{SD}	$I_S=0.35\text{A}$, $V_{GS}=0\text{V}$	0.5		1.1	V

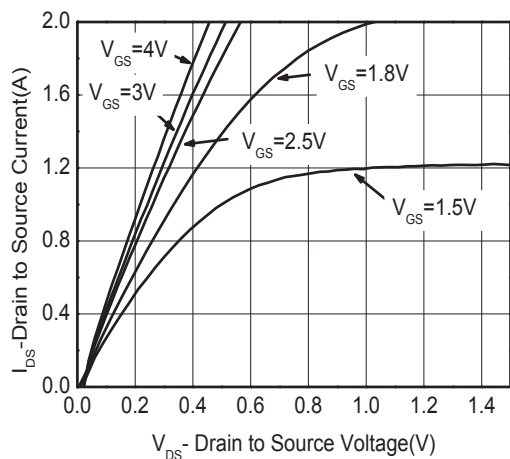
■ Marking

Marking	6*
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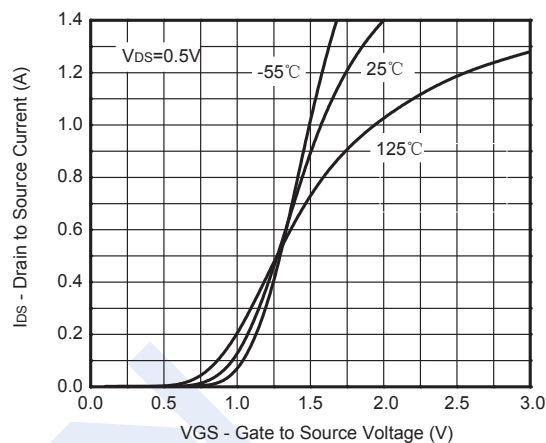
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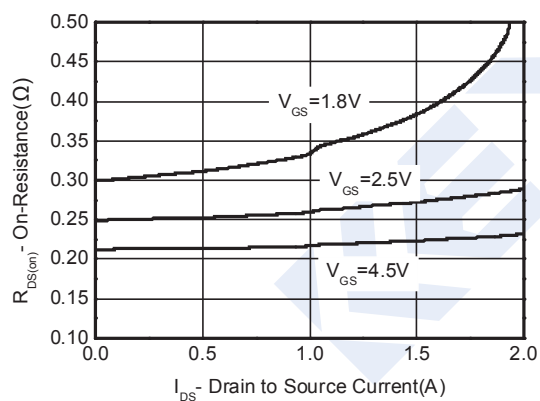
■ Typical Characteristics



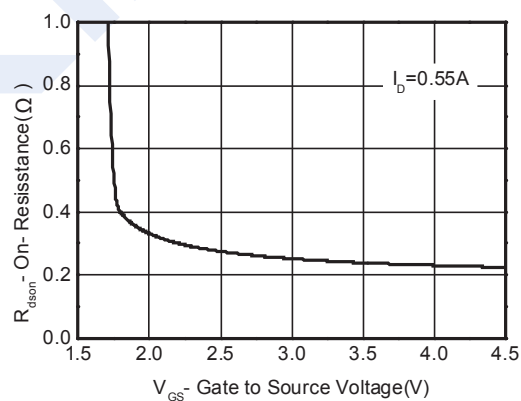
Output characteristics



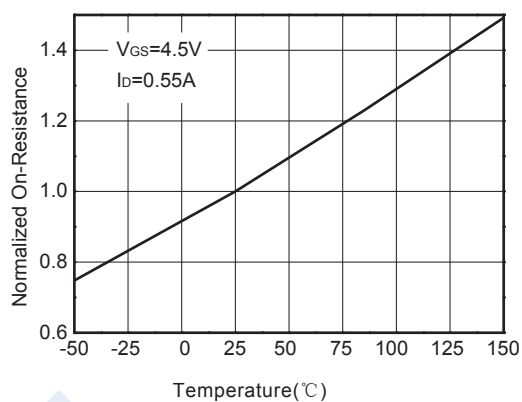
Transfer characteristics



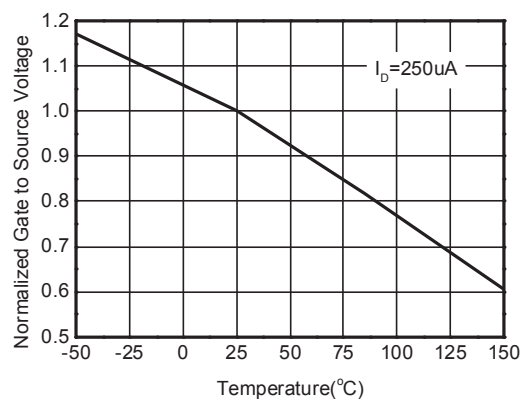
On-Resistance vs. Drain current



On-Resistance vs. Gate -to-Source voltage



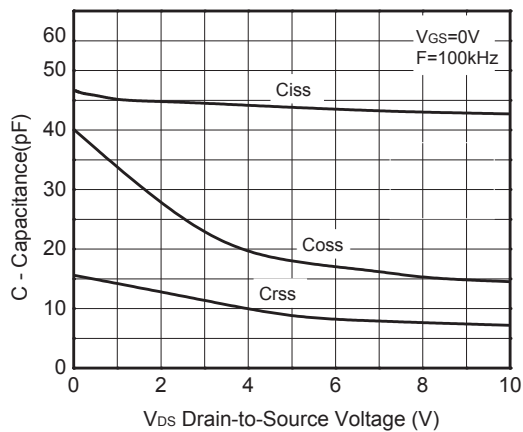
On-Resistance vs. Junction temperature



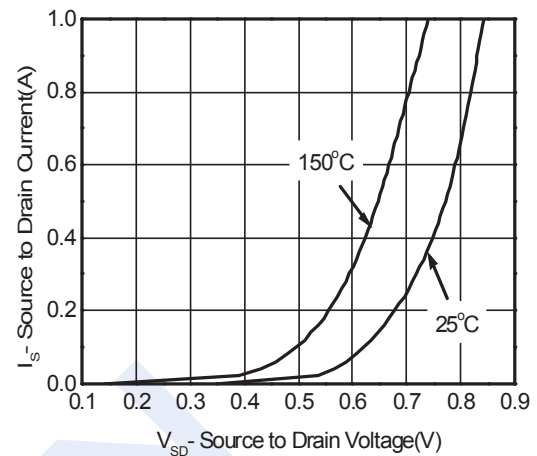
Threshold voltage vs. Temperature

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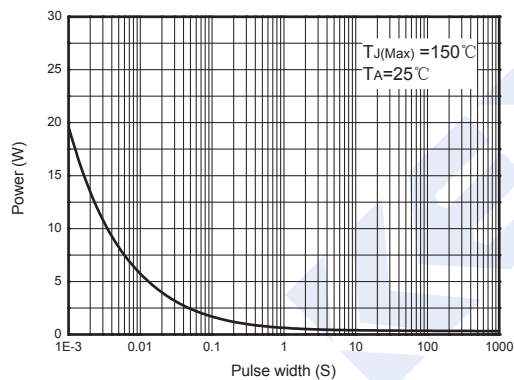
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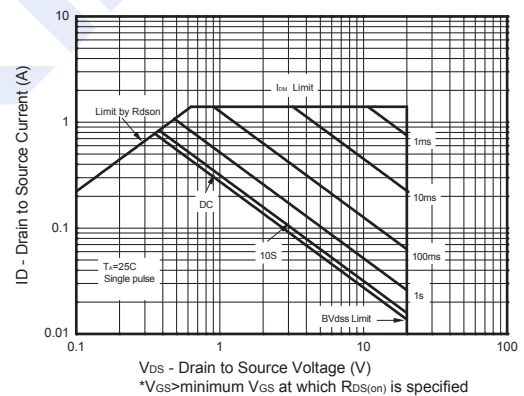
Capacitance



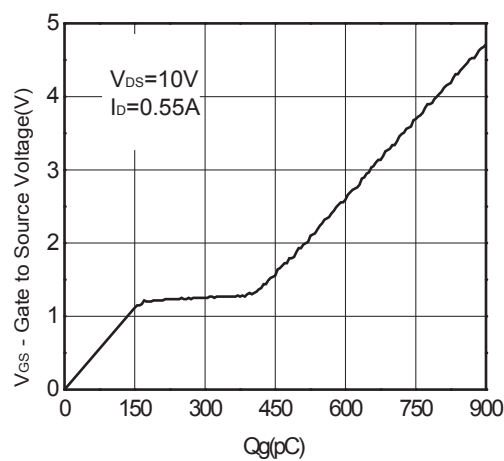
Body diode forward voltage



Single pulse power

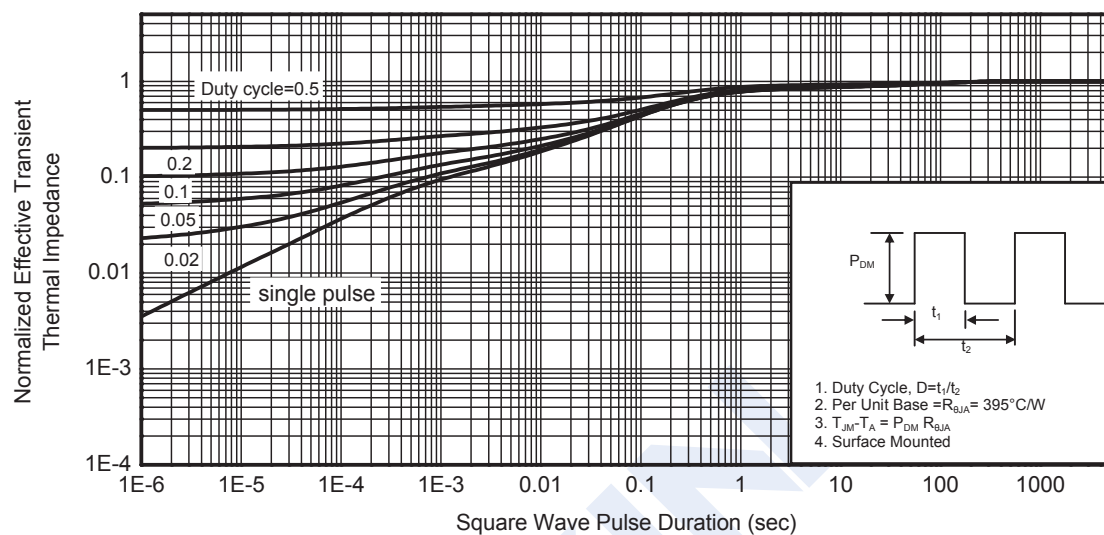


Safe operating power



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Transient thermal response (Junction-to-Ambient)