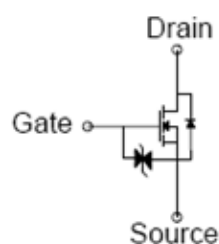
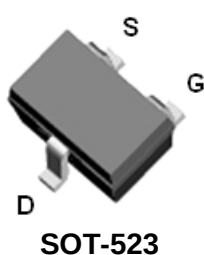


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N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	6Ω @ $V_{GS} = 4V$	110mA



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ¹	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	110	mA
	$T_A = 100\text{ }^{\circ}\text{C}$		70	
Pulsed Drain Current ²		I_{DM}	400	
Avalanche Current		I_{AS}	300	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	0.5	mJ
Power Dissipation	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	150	mW
	$T_A = 100\text{ }^{\circ}\text{C}$		60	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		833	$^{\circ}\text{C} / \text{W}$

¹Limited by maximum junction temperature.

²Limited by package.

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ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 100\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 100\mu A$	0.9	1.3	1.8	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 16V$			± 30	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4V, I_D = 100mA$			6	Ω
		$V_{GS} = 2.5V, I_D = 10mA$			13	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 0.1A$		0.3		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		40		pF
Output Capacitance	C_{oss}			11		
Reverse Transfer Capacitance	C_{rss}			6		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 15V,$ $I_D \cong 100mA, V_{GS} = 4V, R_{GEN} = 6\Omega$		21		nS
Rise Time ²	t_r			45		
Turn-Off Delay Time ²	$t_{d(off)}$			86		
Fall Time ²	t_f			88		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^{\circ}C$)						
Continuous Current	I_S				110	mA
Forward Voltage ¹	V_{SD}	$I_F = 0.5A, V_{GS} = 0V$			1.3	V

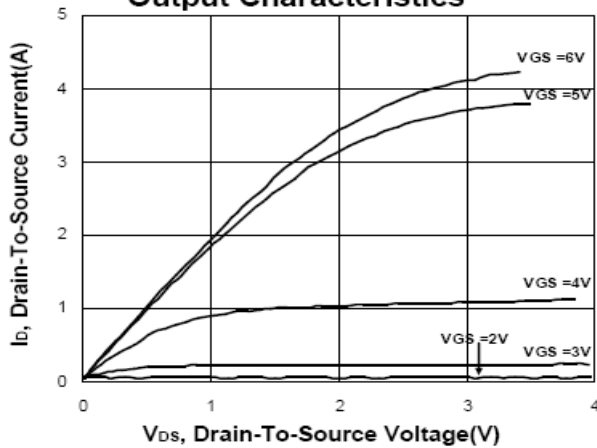
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

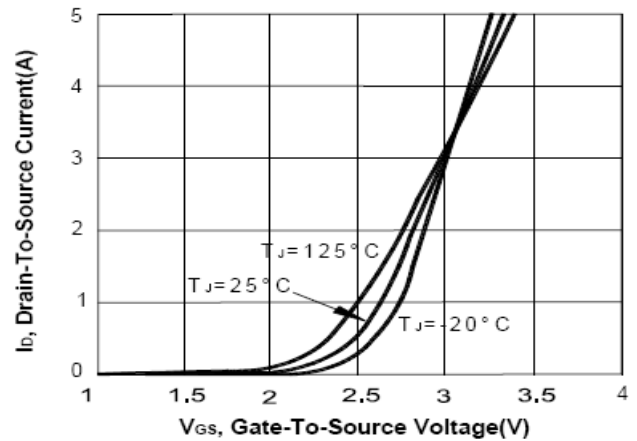
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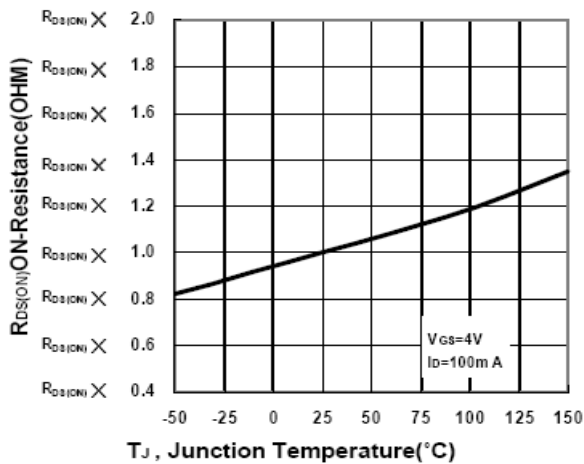
Output Characteristics



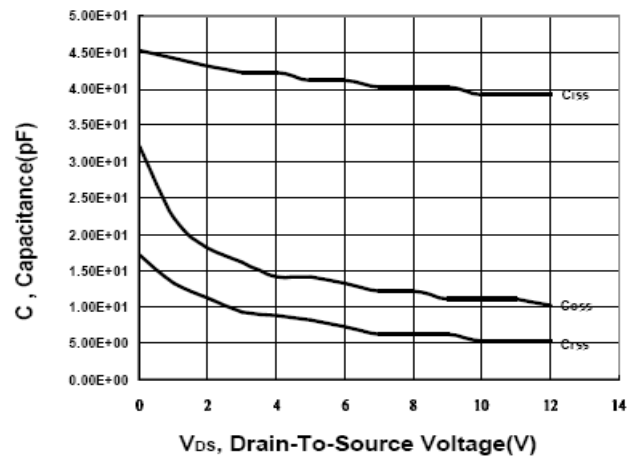
Transfer Characteristics



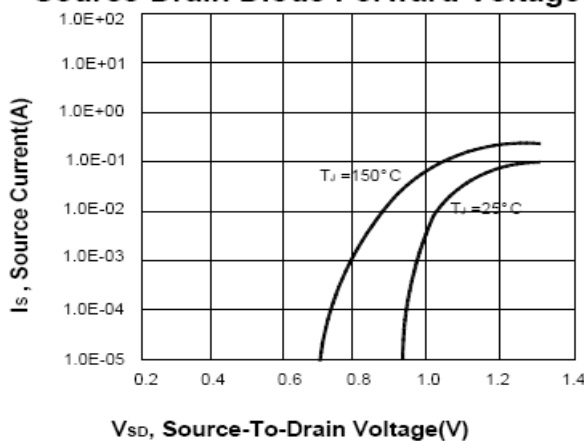
On-Resistance VS Temperature



Capacitance Characteristic



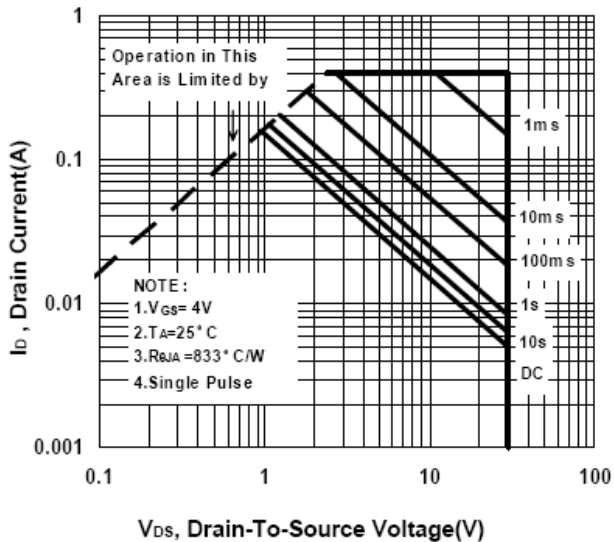
Source-Drain Diode Forward Voltage



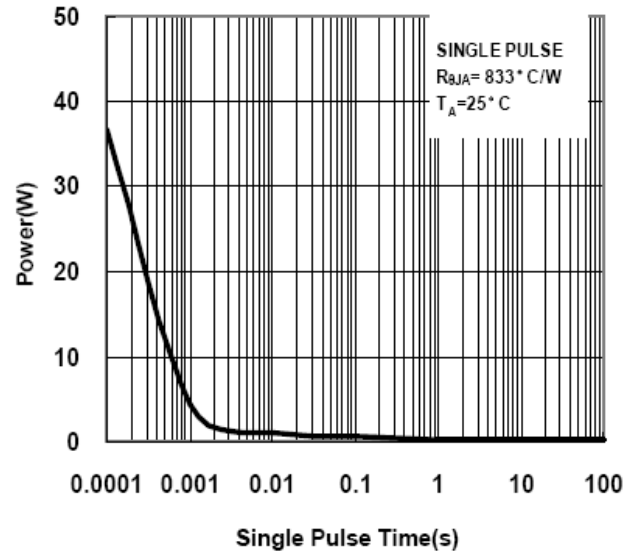
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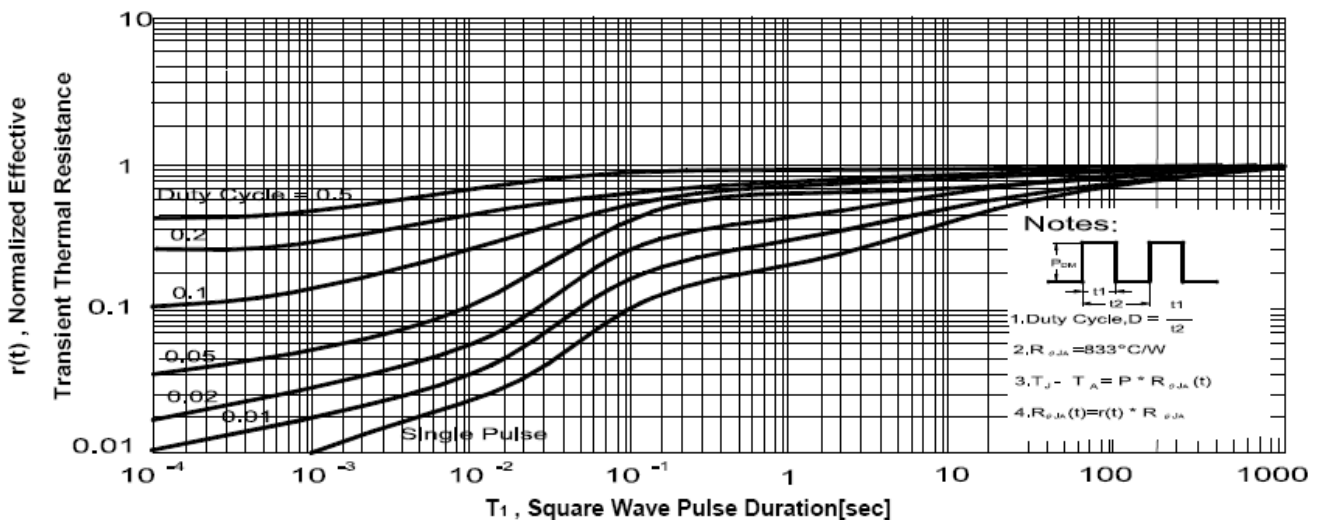
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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Package Dimension

SOT-523 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	1.5		1.7	H	0.1		0.2
B	0.9		1.1	J	0		0.1
C	0.15		0.25	K	0.7		0.9
D	1.45		1.75	L		0.55	
E	0.25		0.325	M	0.28		0.44
F		0.5		N	0.75		0.85
G	0.7		0.8				

