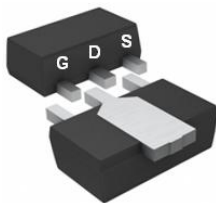


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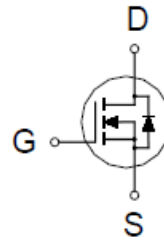
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	240mΩ @ $V_{GS} = 10V$	2.2A



SOT-89



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	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	2.2	A
	$T_A = 100\text{ }^{\circ}\text{C}$		1.8	
Pulsed Drain Current ¹		I_{DM}	8	
Avalanche Current		I_{AS}	6	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	18	mJ
Power Dissipation	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	2.5	W
	$T_A = 100\text{ }^{\circ}\text{C}$		1.6	
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 ²	$R_{\theta JA}$		50	$^{\circ}\text{C} / \text{W}$
Junction-to-Case	$R_{\theta JC}$		10	

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^{\circ}\text{C}$.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.5	2	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 80V, V _{GS} = 0V			1	μA
		V _{DS} = 80V, V _{GS} = 0V , T _J = 125 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 5V, I _D = 1A		192	250	mΩ
		V _{GS} = 10V, I _D = 2A		185	240	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 2A		7		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		605		pF
Output Capacitance	C _{oss}			44		
Reverse Transfer Capacitance	C _{rss}			27		
Total Gate Charge ²	Q _g (V _{GS} =10V)	V _{DS} = 50V, I _D = 2A		15		nC
	Q _g (V _{GS} =5V)			9		
Gate-Source Charge ²	Q _{gs}			1.6		
Gate-Drain Charge ²	Q _{gd}			4.6		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 50V, I _D ≅ 2A, V _{GS} = 10V, R _{GEN} = 6Ω		17		nS
Rise Time ²	t _r			22		
Turn-Off Delay Time ²	t _{d(off)}			26		
Fall Time ²	t _f			27		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current ²	I _S				1.7	A
Forward Voltage ¹	V _{SD}	I _F = 2A, V _{GS} = 0V			1.4	V
Reverse Recovery Time	t _{rr}	I _F = 2A, dI _F /dt = 100A / μS		30		nS
Reverse Recovery Charge	Q _{rr}			30		nC

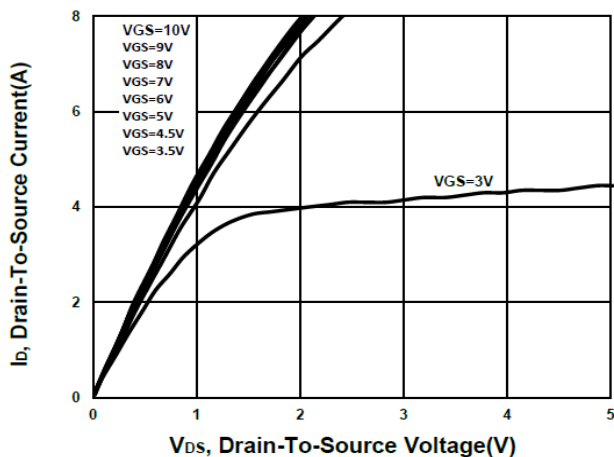
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

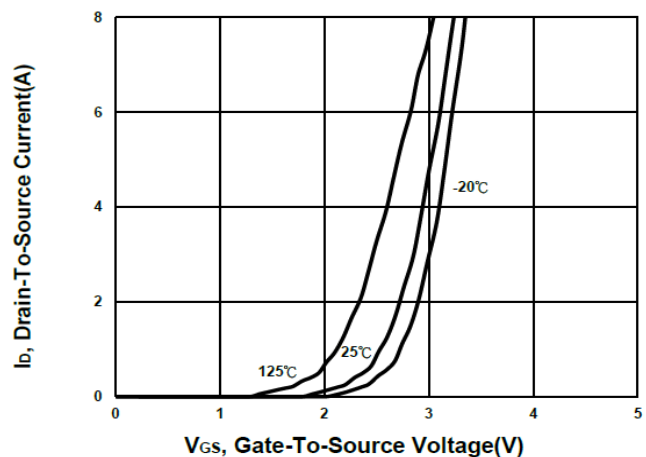
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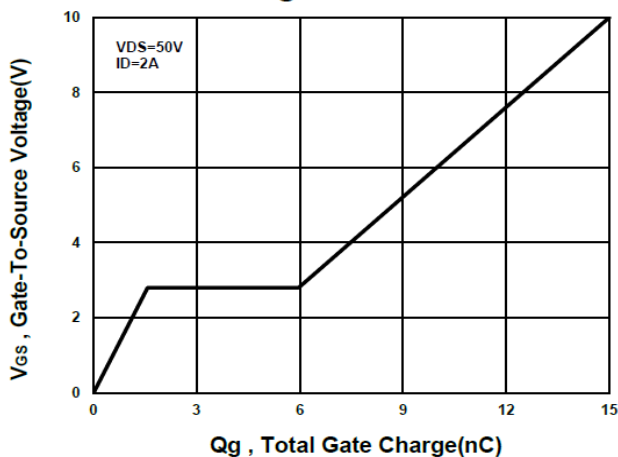
Output Characteristics



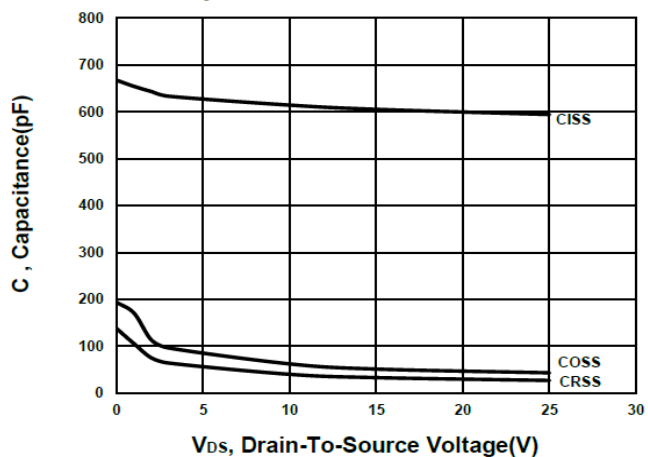
Transfer Characteristics



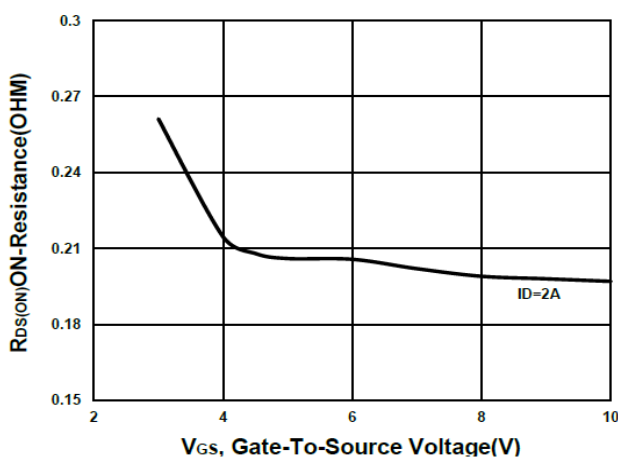
Gate charge Characteristics



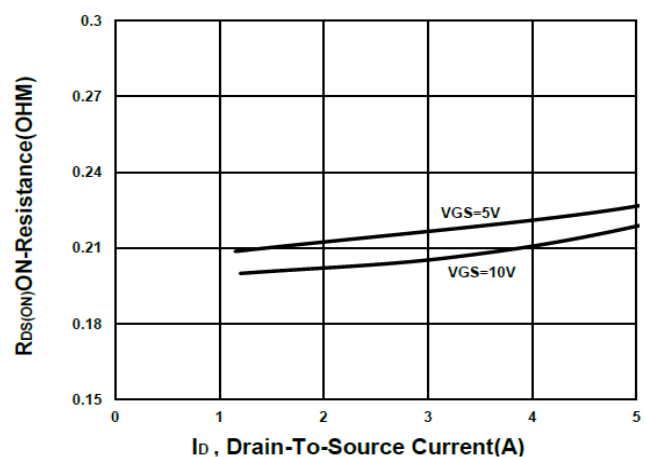
Capacitance Characteristic



On-Resistance VS Gate-To-Source



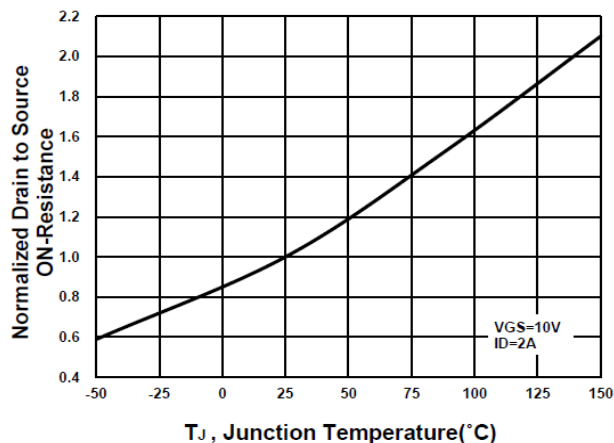
On-Resistance VS Drain Current



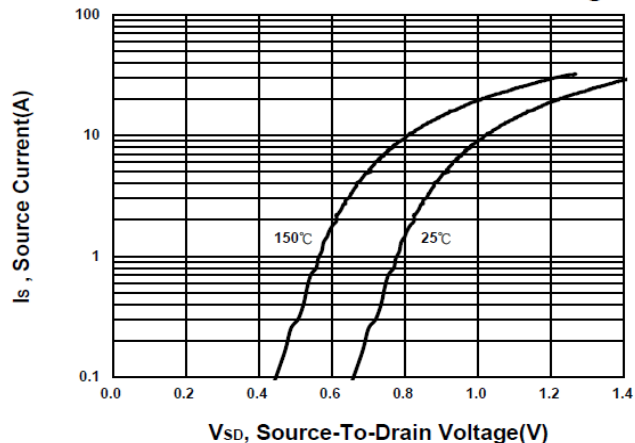
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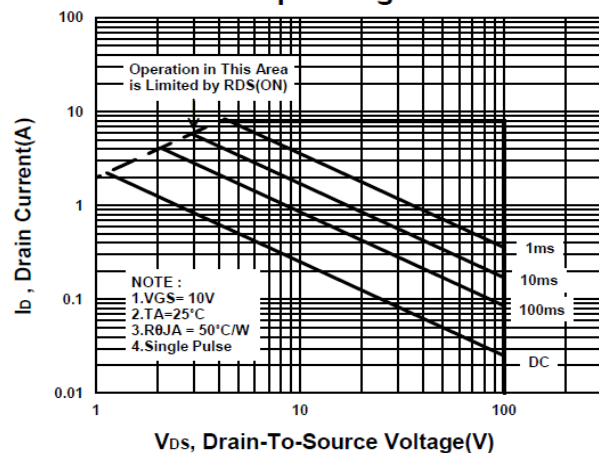
On-Resistance VS Temperature



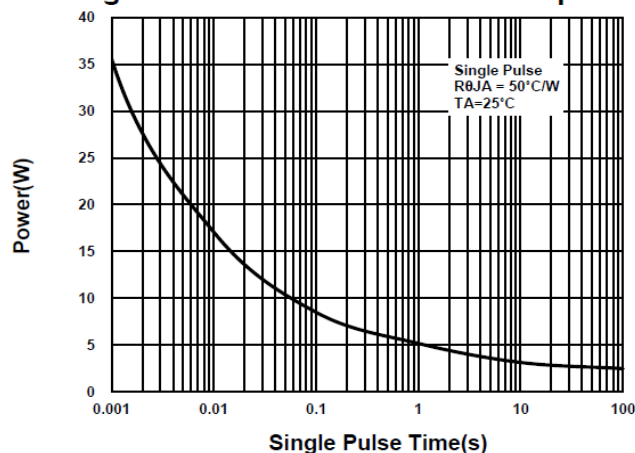
Source-Drain Diode Forward Voltage



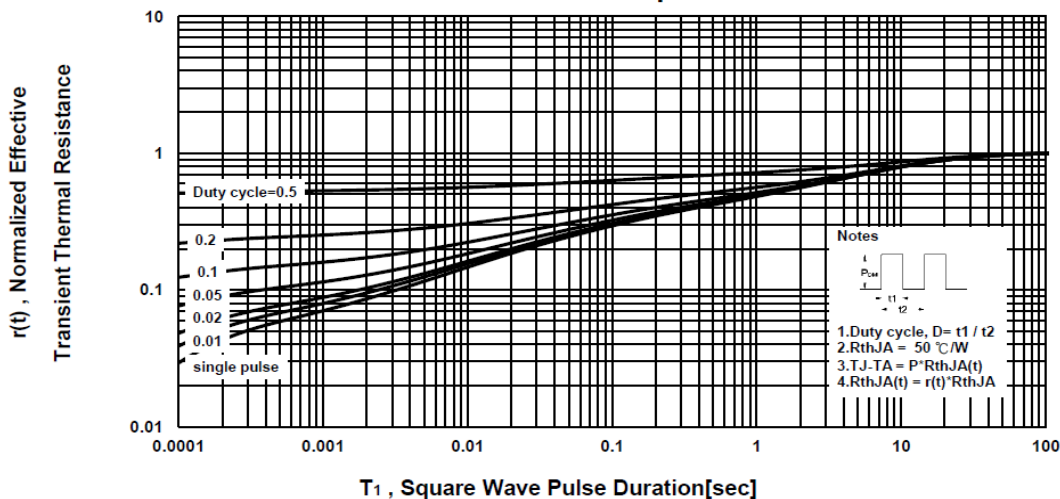
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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Package Dimension

SOT-89 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.45	4.5	4.55	G	0.36	0.50	0.56
B	1.4	1.7	1.8	H	1.3	1.5	1.7
C	0	0.7	1.05	I	2.8	3.0	3.2
D	2.3	2.5	2.6	J	1.4	1.5	1.6
E	0.8	1.04	1.2	K	3.8	4.2	4.25
F	0.3	0.46	0.52	L	0.35	0.4	0.44

