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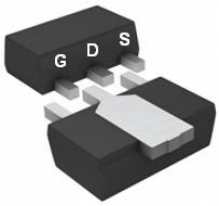
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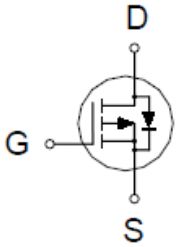
P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30V	45mΩ @V_{GS} = -10V	-3.5A



SOT-89



ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	T_A = 25 °C	I_D	-3.5	A
	T_A = 70 °C		-2.8	
Pulsed Drain Current[1]		I_{DM}	-20	
Avalanche Current		I_{AS}	-19	
Avalanche Energy	L = 0.1mH	E_{AS}	18	mJ
Power Dissipation	T_A = 25 °C	P_D	0.78	W
	T_A = 70 °C		0.5	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		18	°C / W
Junction-to-Ambient	$R_{\theta JA}$		160	

[1]Pulse width limited by maximum junction temperature.

[2]Duty cycle ≤ 1%.

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P-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS (T_J = 25 °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 = -250μA	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1	-1.5	-3	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0V			-1	μA
		V_{DS} = -20V, V_{GS} = 0V , T_J = 125 °C			-10	
On-State Drain Current[1]	$I_{D(ON)}$	V_{DS} = -10V, V_{GS} = -10V	-20			A
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = -4.5V, I_D = -3A		56	75	mΩ
		V_{GS} = -10V, I_D = -3.5A		42	45	
Forward Transconductance[1]	g_{fs}	V_{DS} = -10V, I_D = -3.5A		16		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -15V, f = 1MHz		666		pF
Output Capacitance	C_{oss}			163		
Reverse Transfer Capacitance	C_{rss}			114		
Gate Resistance	R_g	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz		6		Ω
Total Gate Charge[2]	Q_g	V_{DS} = 0.5$V_{(BR)DSS}$, V_{GS} = -10V, I_D = -3.5A		13		nC
Gate-Source Charge[2]	Q_{gs}			2.1		
Gate-Drain Charge[2]	Q_{gd}			2.6		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = -15V, I_D≅ -3.5A, V_{GS} = -10V, R_{GS} = 6Ω		5.7		nS
Rise Time[2]	t_r			10		
Turn-Off Delay Time[2]	$t_{d(off)}$			18		
Fall Time[2]	t_f			5		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				-1	A
Forward Voltage[1]	V_{SD}	I_F = -1A, V_{GS} = 0V			-1.2	V
Reverse Recovery Time	t_{rr}	IF = -3.5A, dIF/dt = 100A / μS		15.5		nS
Reverse Recovery Charge	Q_{rr}			7.9		nC

[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

[2]Independent of operating temperature.

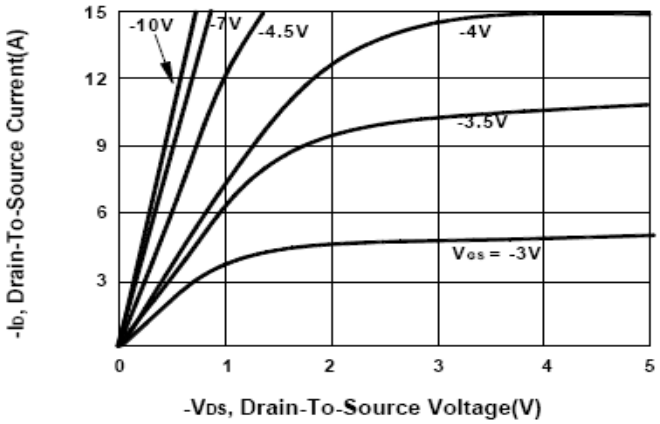
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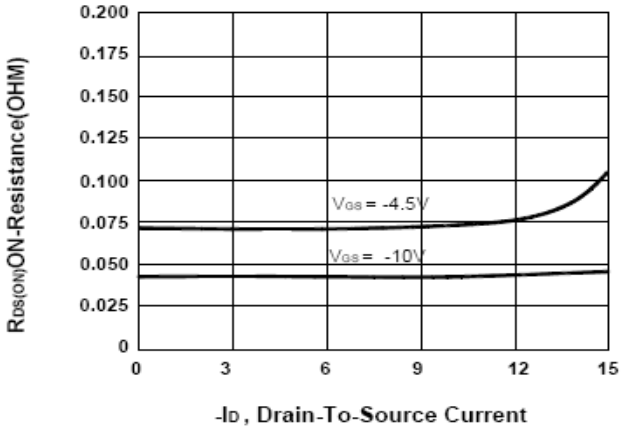
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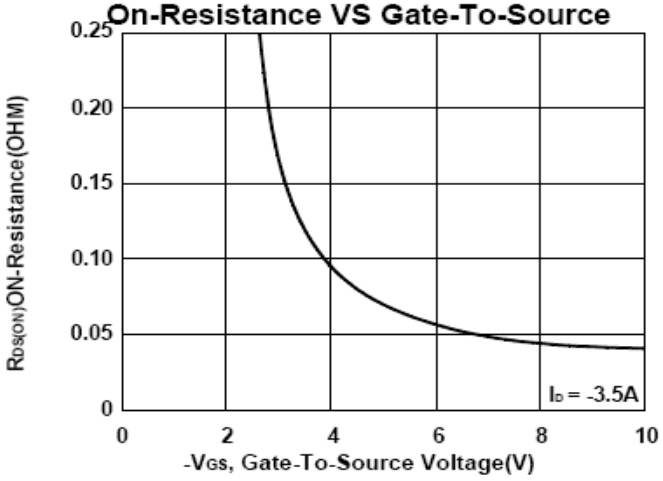
Output Characteristics



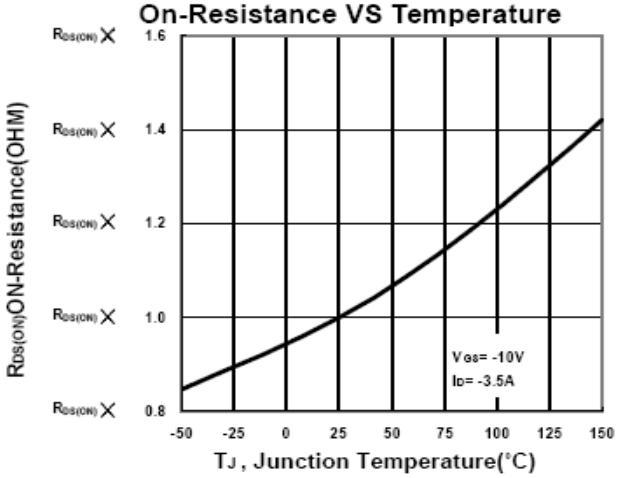
On-Resistance VS Drain Current



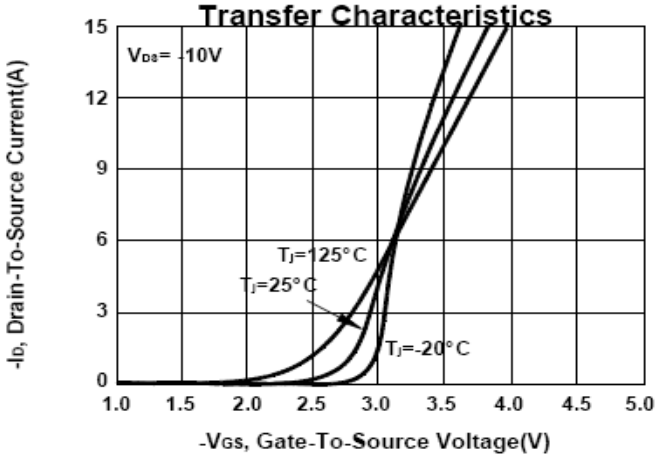
On-Resistance VS Gate-To-Source



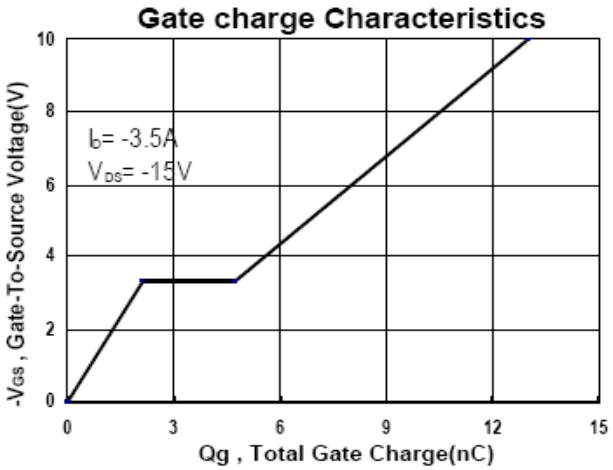
On-Resistance VS Temperature



Transfer Characteristics



Gate charge Characteristics



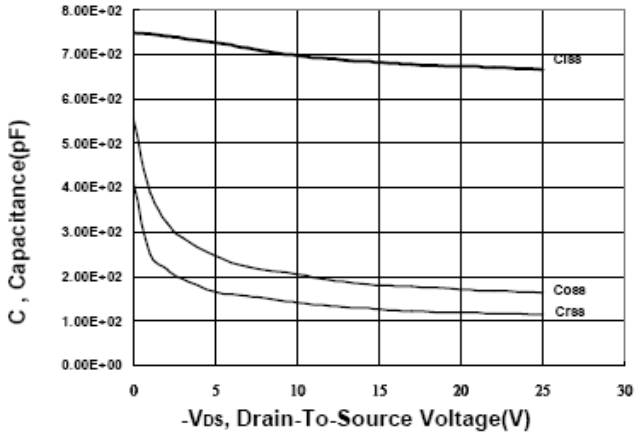
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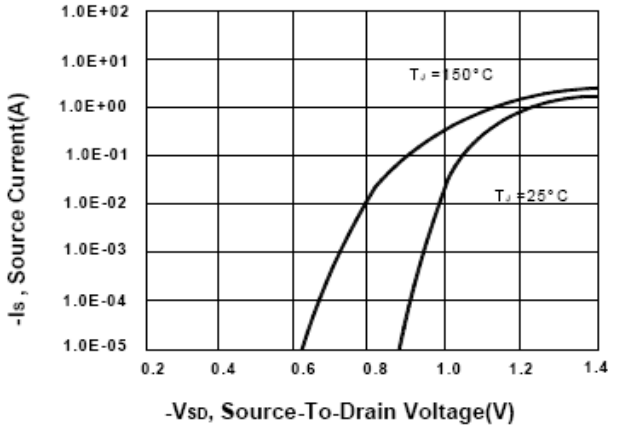
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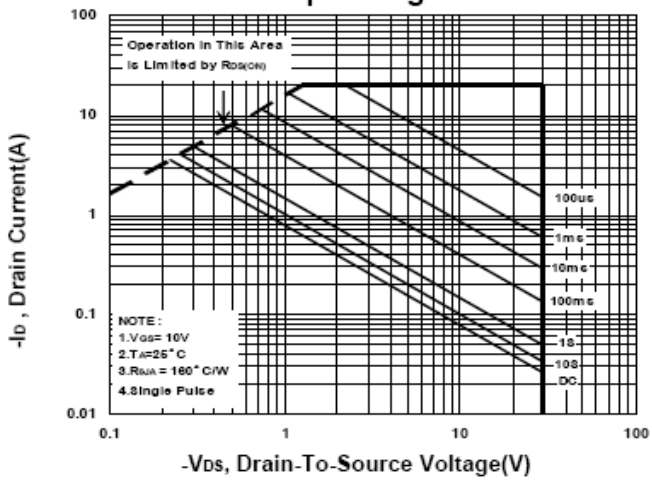
Capacitance Characteristic



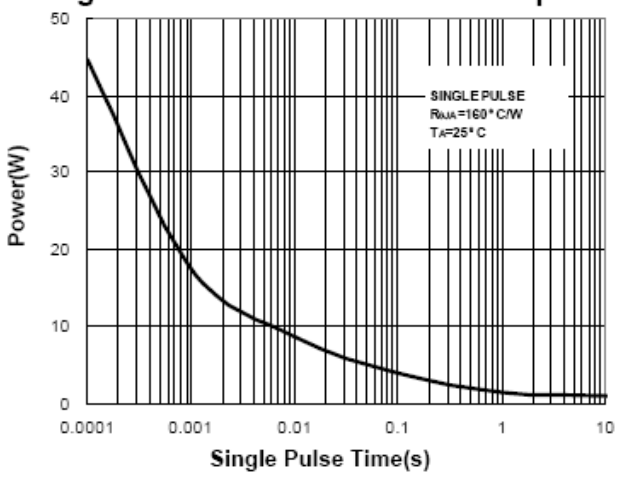
Body Diode Forward Voltage VS Source current



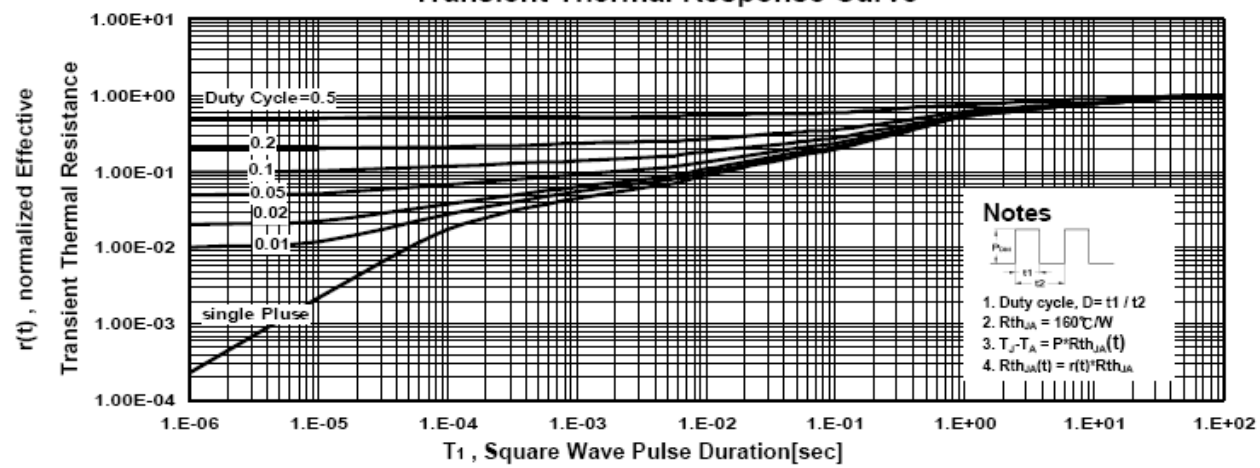
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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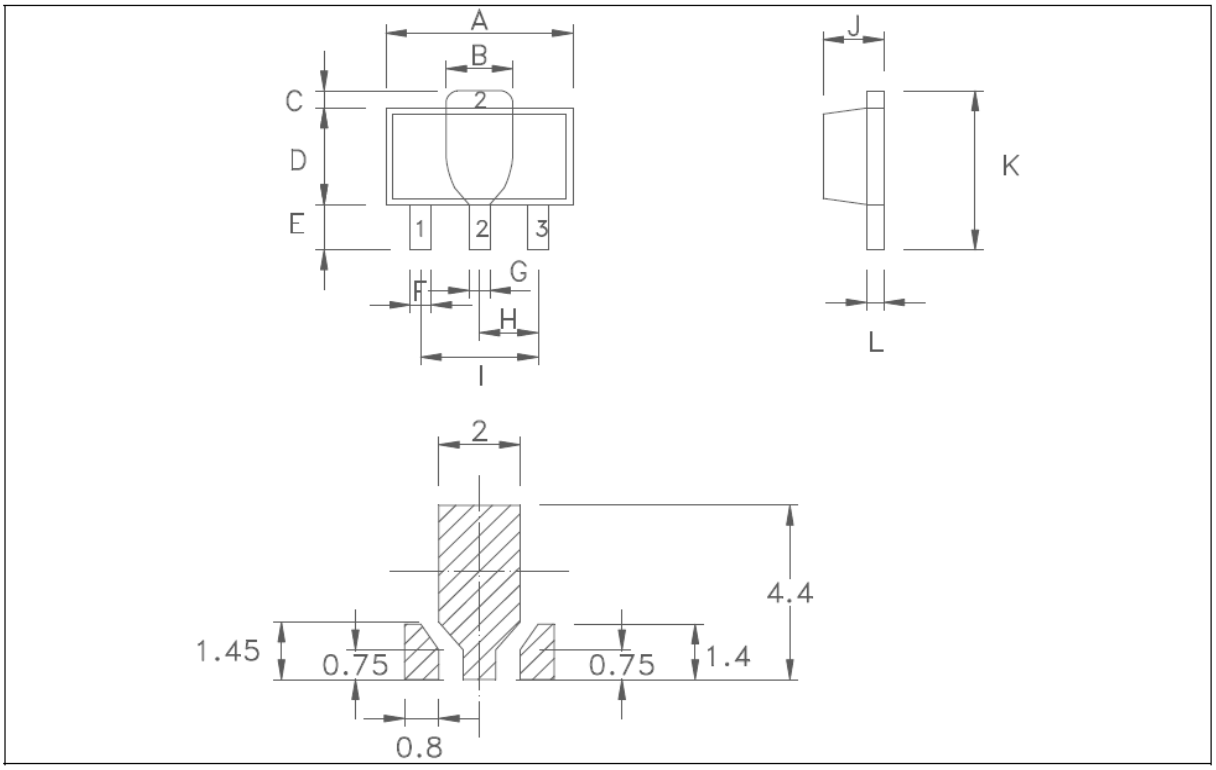
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Package Dimension

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



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