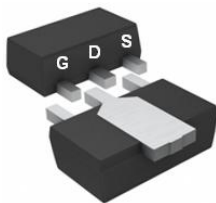


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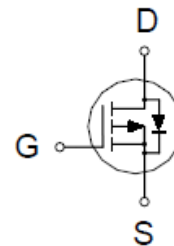
P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

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



SOT-89



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ 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	$T_A = 25\text{ }^\circ\text{C}$	I_D	-3.5	A
	$T_A = 70\text{ }^\circ\text{C}$		-2.8	
Pulsed Drain Current ¹		I_{DM}	-20	
Avalanche Current		I_{AS}	-19	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	18	mJ
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	0.78	W
	$T_A = 70\text{ }^\circ\text{C}$		0.5	
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-Case	$R_{\theta JC}$		18	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		160	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$.

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P-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

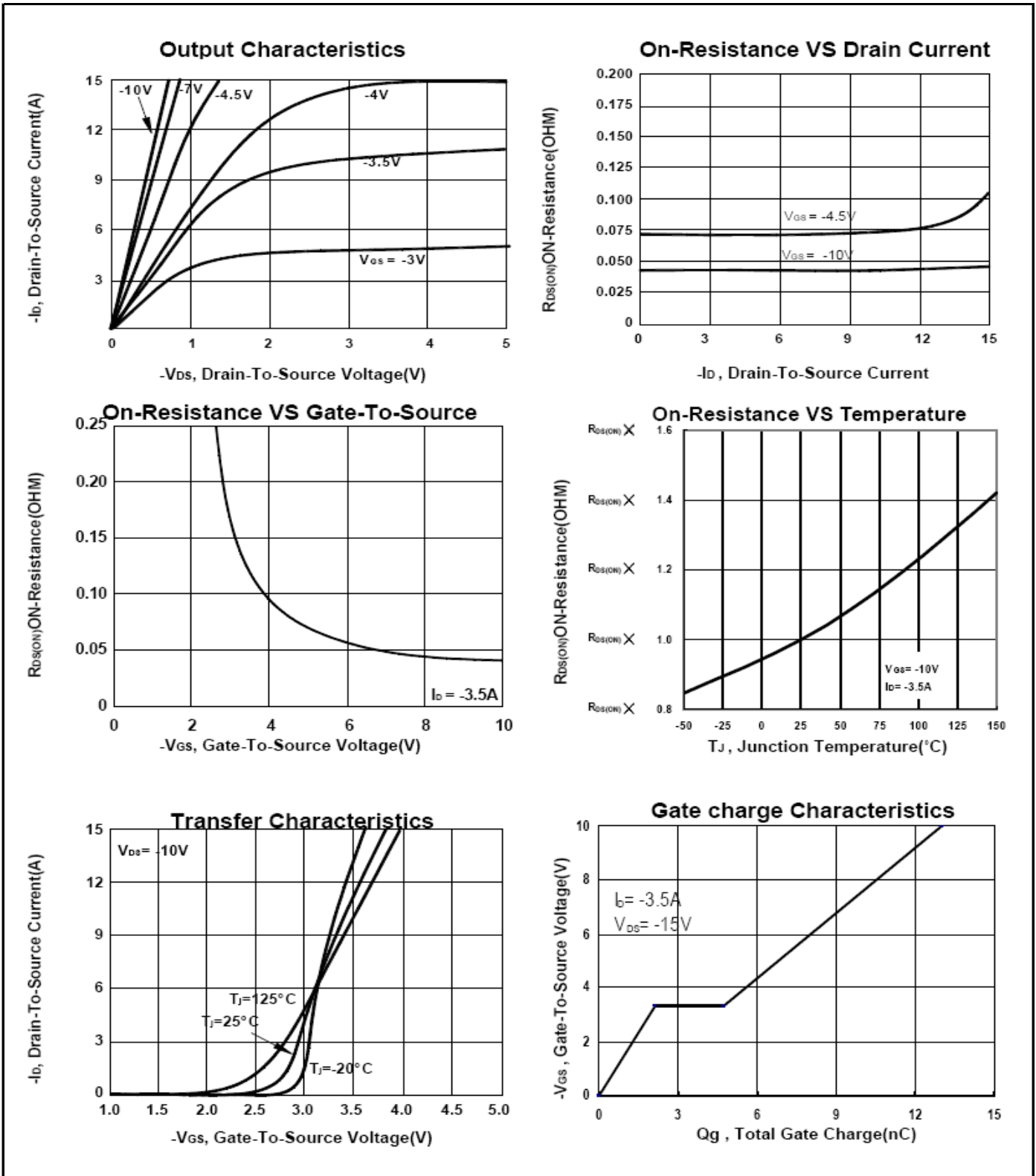
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-3	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	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} = 0.5V _{(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}	I _F = -3.5A, dI _F /dt = 100A / μS		15.5		nS
Reverse Recovery Charge	Q _{rr}				7.9	

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

²Independent of operating temperature.

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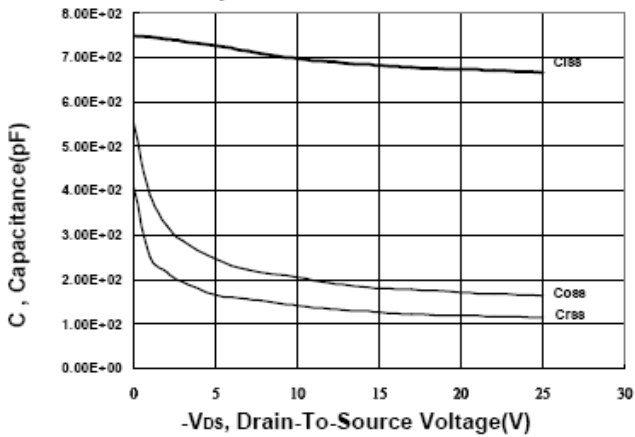
P-Channel Enhancement Mode MOSFET



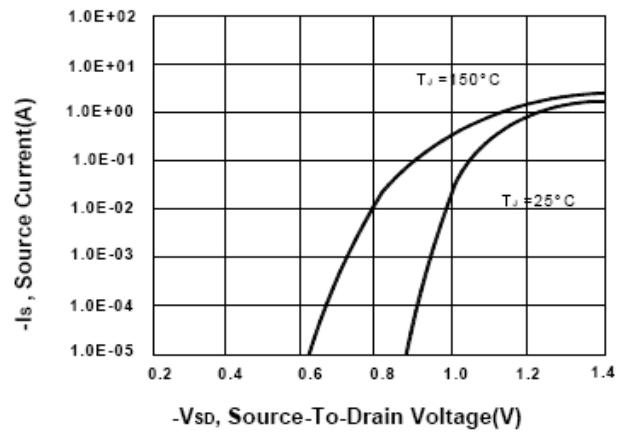
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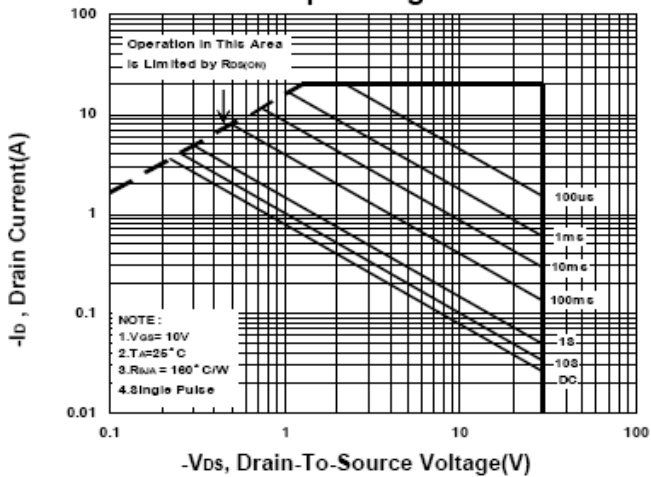
Capacitance Characteristic



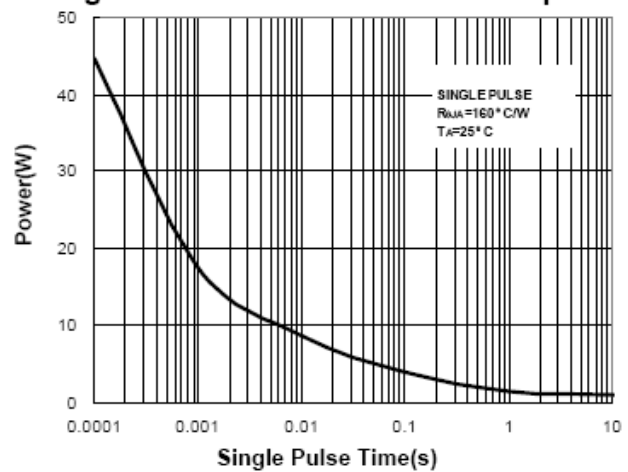
Body Diode Forward Voltage VS Source current



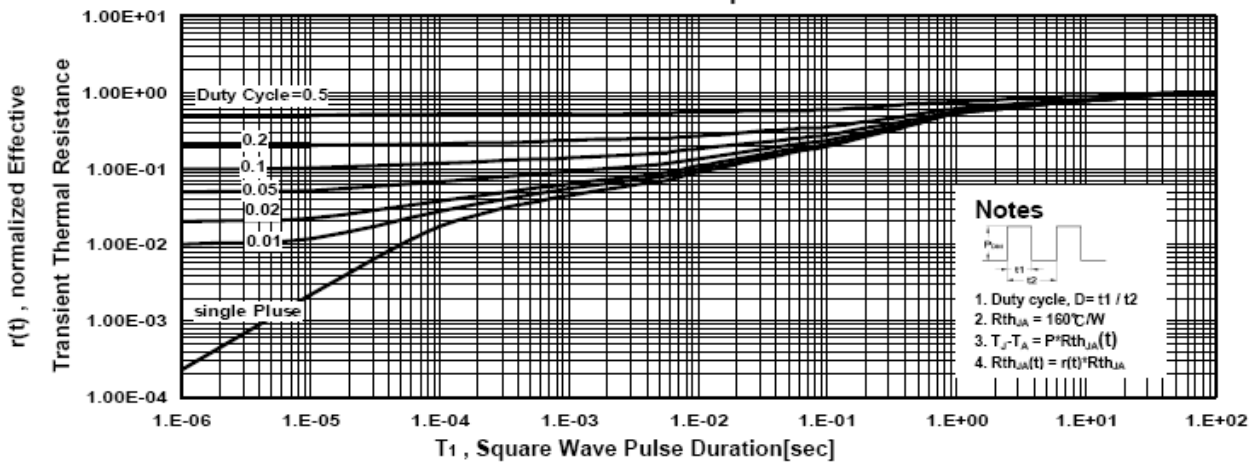
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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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

