



SPC6334

N & P Pair Enhancement Mode MOSFET

DESCRIPTION

The SPC6334 is the N- and P-Channel enhancement mode power field effect transistors are produced using high cell density , DMOS trench technology. This high density process is especially tailored to minimize on-state resistance and provide superior switching performance. These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching , low in-line power loss, and resistance to transients are needed.

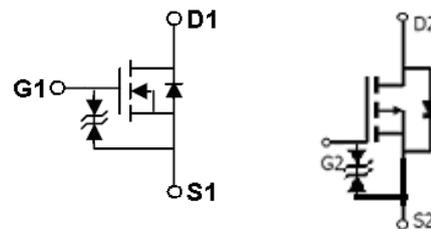
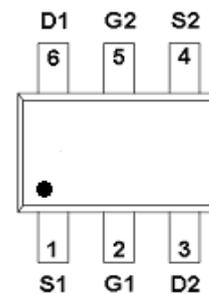
FEATURES

- ◆ N-Channel
 - 30V/0.95A, $R_{DS(ON)}=550m\Omega@V_{GS}=4.5V$
 - 30V/0.75A, $R_{DS(ON)}=650m\Omega@V_{GS}=2.5V$
 - 30V/0.65A, $R_{DS(ON)}=850m\Omega@V_{GS}=1.8V$
- ◆ P-Channel
 - 30V/1.0A, $R_{DS(ON)}=650m\Omega@V_{GS}=-4.5V$
 - 30V/0.8A, $R_{DS(ON)}=900m\Omega@V_{GS}=-2.5V$
 - 30V/0.7A, $R_{DS(ON)}=1500m\Omega@V_{GS}=-1.8V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ ESD protected
- ◆ SOT-363 (SC-70-6L) package design

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

PIN CONFIGURATION (SOT-363 / SC-70-6L)



PART MARKING





SPC6334

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PIN DESCRIPTION

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	D2	Drain 2
4	S2	Source 2
5	G2	Gate 2
6	D1	Drain1

ORDERING INFORMATION

Part Number	Package	Part Marking
SPC6334S36RGB	SOT-363	34

※ Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)

※ SPC6334S36RGB : Tape Reel ; Pb – Free ; Halogen -Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Typical		Unit	
		N-Channel	P-Channel		
Drain-Source Voltage	V _{DSS}	30	-30	V	
Gate –Source Voltage	V _{GSS}	±12	±12	V	
Continuous Drain Current(T _J =150°C)	I _D	TA=25°C	-0.45	A	
		TA=80°C	-0.35		
Pulsed Drain Current	I _{DM}	4	-1.0	A	
Continuous Source Current(Diode Conduction)	I _S	0.6	-0.3	A	
Power Dissipation	P _D	TA=25°C	0.3	W	
		TA=70°C	0.19		
Operating Junction Temperature	T _J	-55/150		°C	
Storage Temperature Range	T _{STG}	-55/150		°C	
Thermal Resistance-Junction to Ambient	R _{θJA}	T ≤ 10sec	360	360	°C/W
		Steady State	400	400	



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ELECTRICAL CHARACTERISTICS

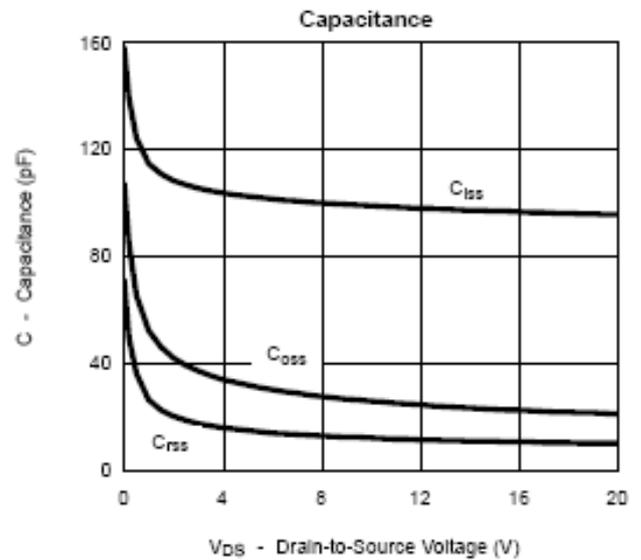
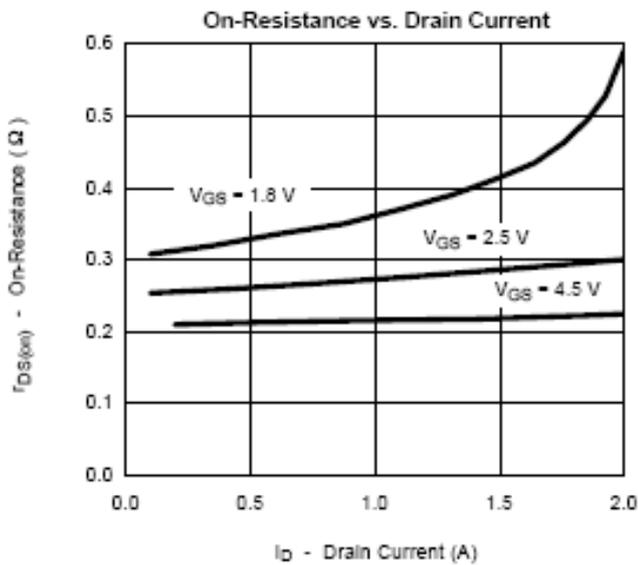
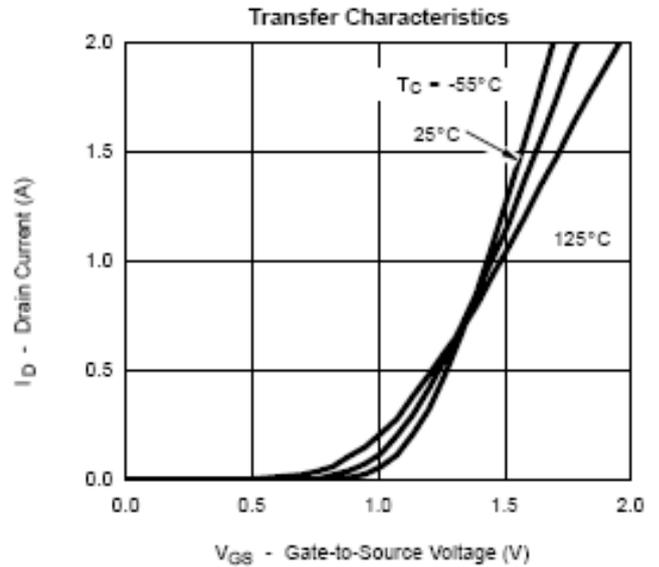
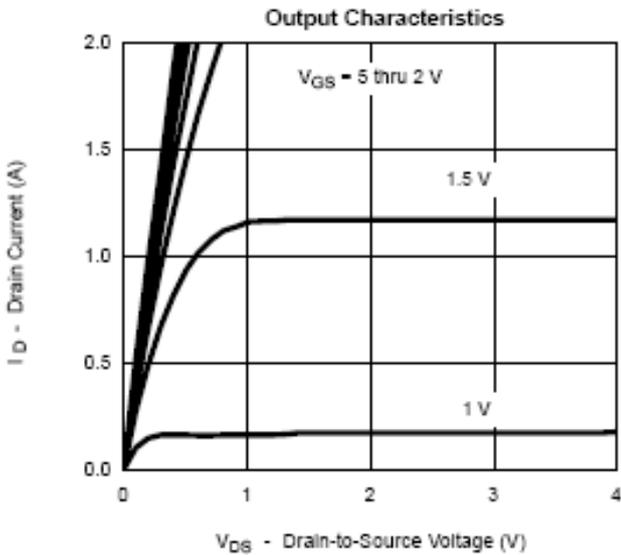
(TA=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit	
Static							
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D = 250uA	N-Ch	30		V	
		V _{GS} =0V, I _D =-250uA	P-Ch	-30			
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	N-Ch	0.35	1.0		
		V _{DS} =V _{GS} , I _D =-250uA	P-Ch	-0.35	-1.0		
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V	N-Ch		10	uA	
		V _{DS} =0V, V _{GS} =±12V	P-Ch		-10		
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} =0V	N-Ch		1	uA	
		V _{DS} =-24V, V _{GS} =0V	P-Ch		-1		
		V _{DS} = 24V, V _{GS} =0V T _J =55°C	N-Ch		5		
		V _{DS} =-24V, V _{GS} =0V T _J =55°C	P-Ch		-5		
On-State Drain Current	I _{D(on)}	V _{DS} ≥ 4.5V, V _{GS} =5V	N-Ch	0.7		A	
		V _{DS} ≤ -4.5V, V _{GS} =-5V	P-Ch	-0.7			
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =0.95A	N-Ch		0.45	0.55	Ω
		V _{GS} =-4.5V, I _D =-0.45A	P-Ch			0.65	
		V _{GS} =2.5V, I _D =0.75A	N-Ch		0.50	0.65	
		V _{GS} =-2.5V, I _D =-0.35A	P-Ch			0.90	
		V _{GS} =1.8V, I _D =0.65A	N-Ch		0.70	0.85	
		V _{GS} =-1.8V, I _D =-0.25A	P-Ch			1.50	
Forward Transconductance	g _{fs}	V _{DS} =10V, I _D =0.4A	N-Ch		1.0	S	
		V _{DS} =-10V, I _D =-0.25A	P-Ch		0.4		
Diode Forward Voltage	V _{SD}	I _S =0.15A, V _{GS} =0V	N-Ch		0.8	1.2	V
		I _S =-0.15A, V _{GS} =0V	P-Ch		-0.8	-1.2	
Dynamic							
Total Gate Charge	Q _g	N-Channel V _{DS} =10V, V _{GS} =4.5V, I _D =0.6A P-Channel V _{DS} =-10V, V _{GS} =-4.5V, I _D =-0.6A	N-Ch		1.2	1.5	nC
Gate-Source Charge	Q _{gs}		P-Ch		1.5	2.0	
			N-Ch		0.2		
Gate-Drain Charge	Q _{gd}		P-Ch		0.3		
			N-Ch		0.3		
Turn-On Time	td(on)		N-Ch		5	10	
	tr	P-Ch		5	10		
Turn-Off Time		td(off)	N-Channel V _{DD} =10V, R _L =10Ω, I _D =0.5A V _{GEN} =4.5V, R _G =6Ω	N-Ch		8	15
	P-Channel V _{DD} =-10V, R _L =10Ω, I _D =-0.5A V _{GEN} =-4.5V, R _G =6Ω		P-Ch		15	25	
	N-Ch			10	18		
	P-Ch			8	15		
	tf		N-Ch		1.2	2.8	
			P-Ch		1.4	1.8	



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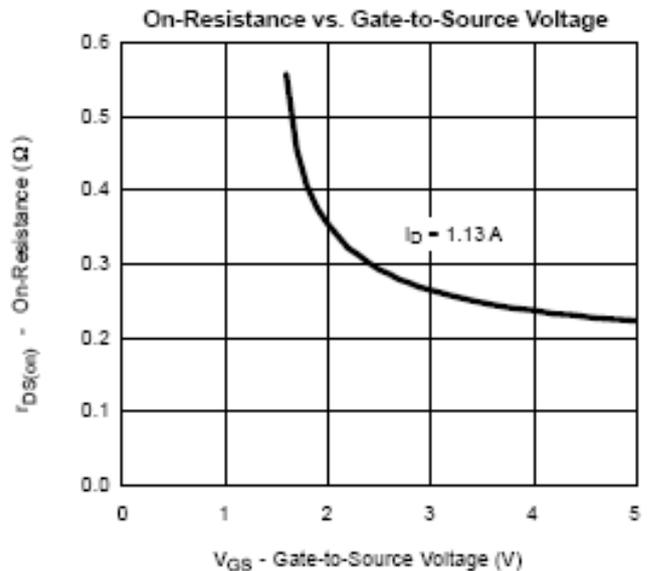
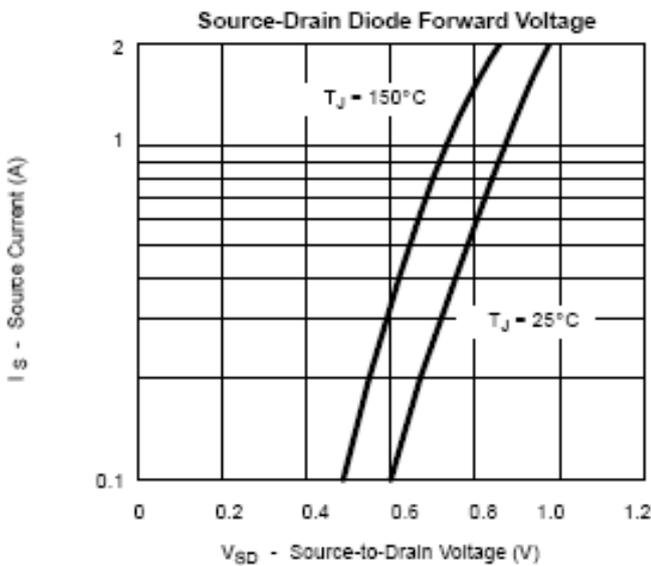
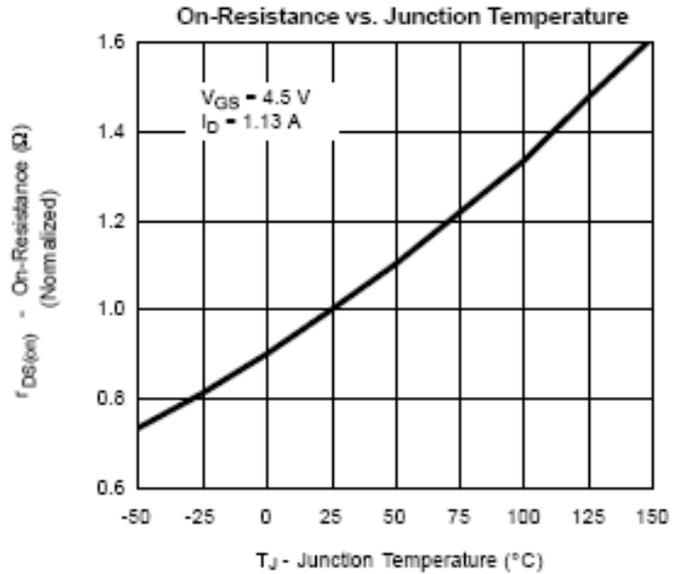
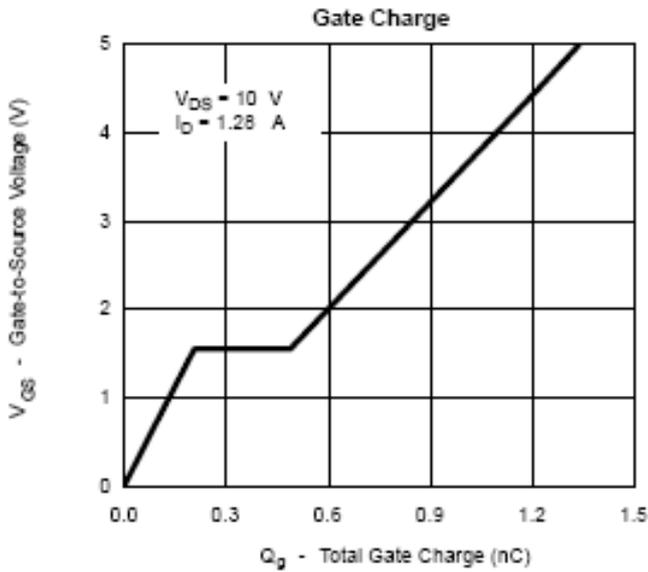
TYPICAL CHARACTERISTICS (N-Channel)





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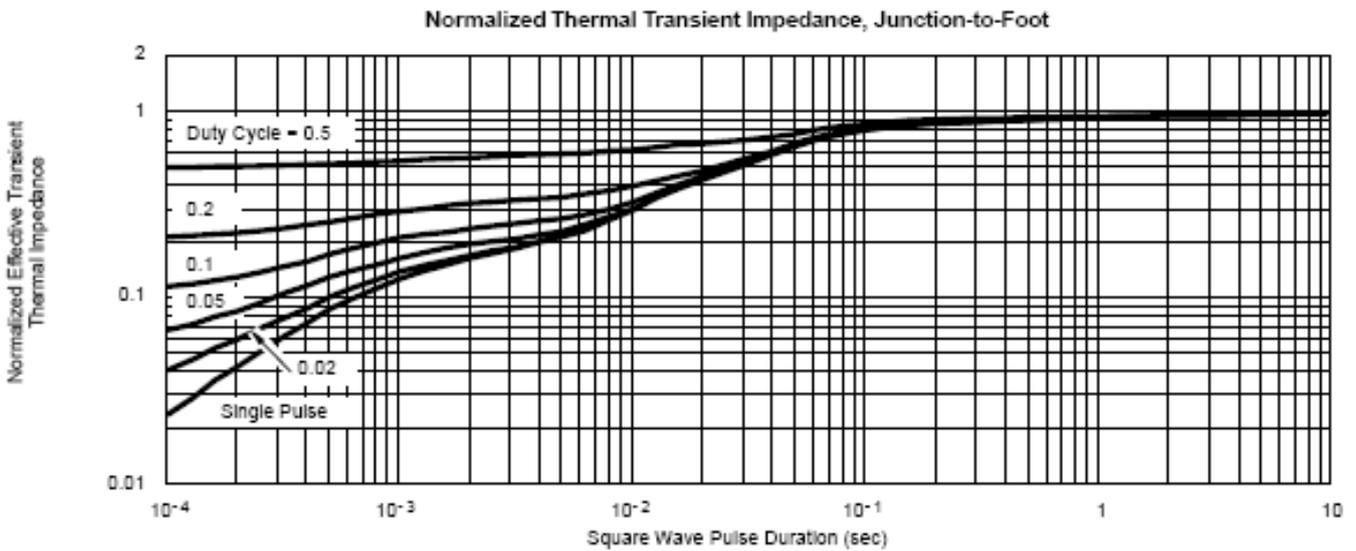
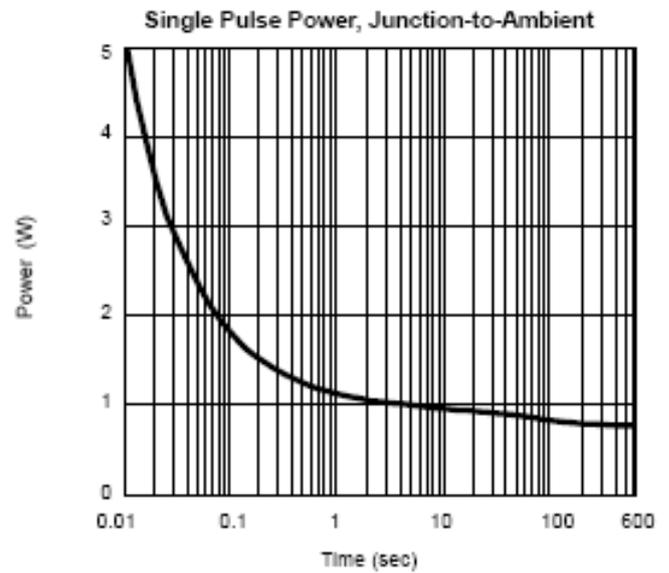
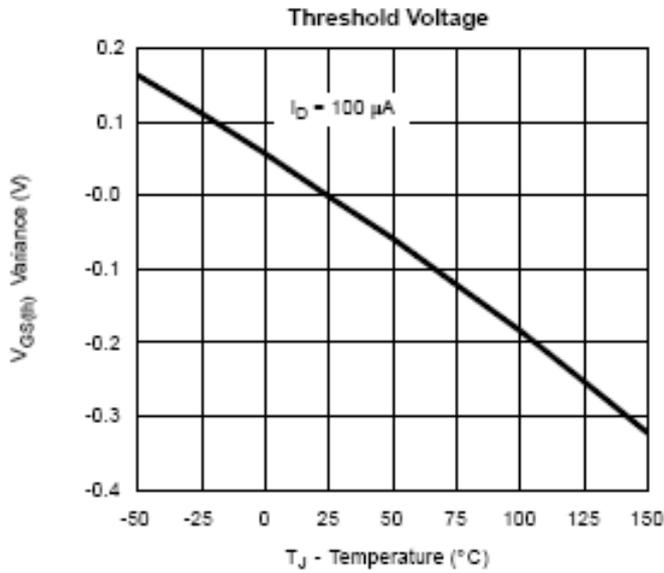
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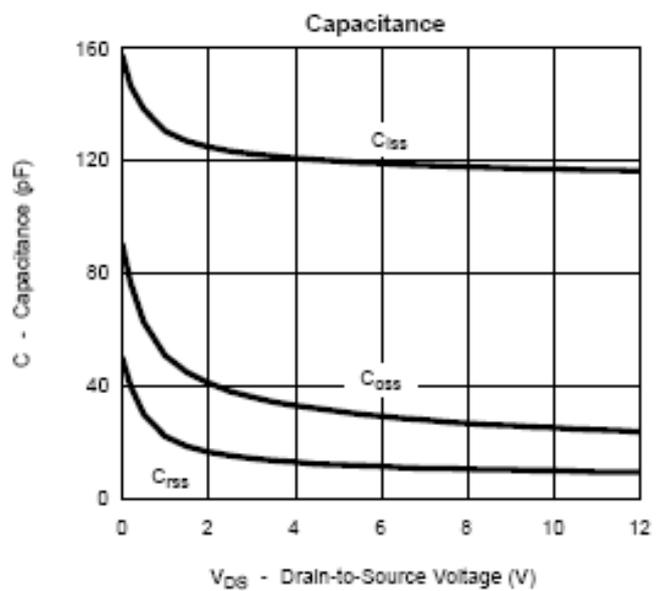
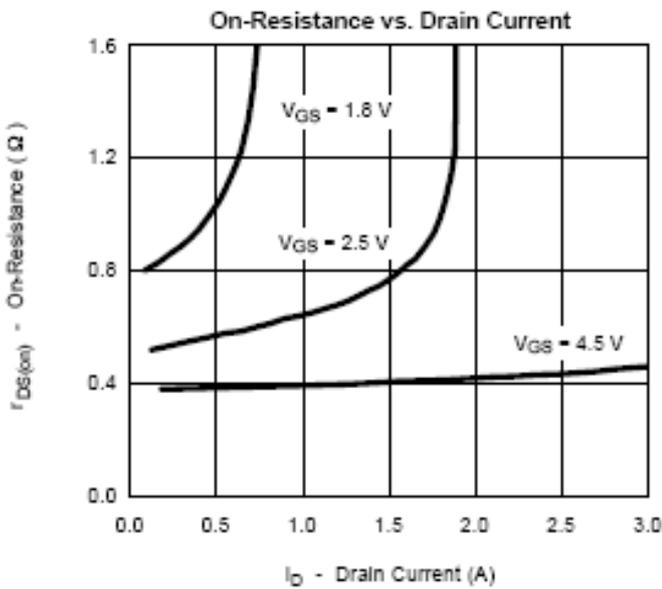
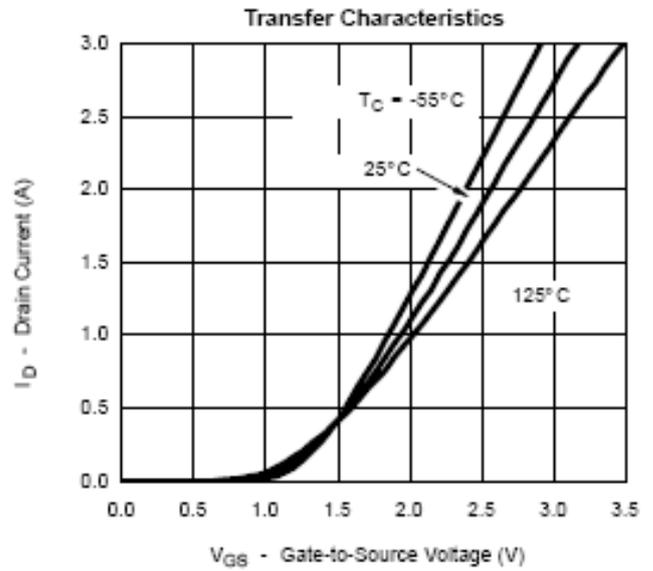
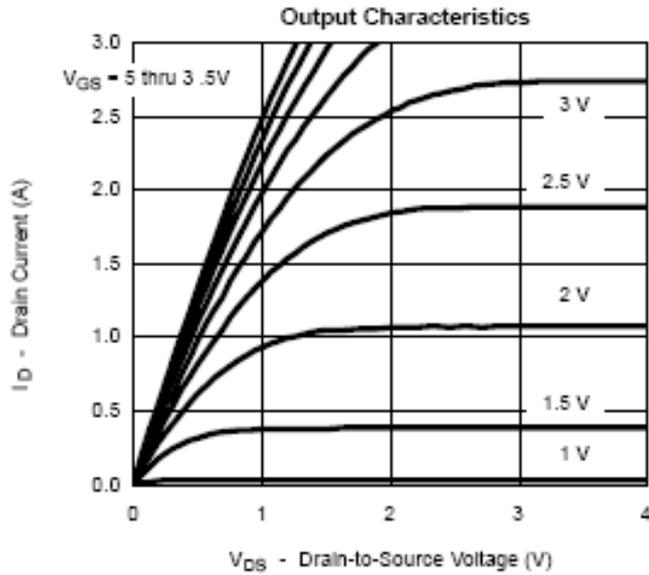
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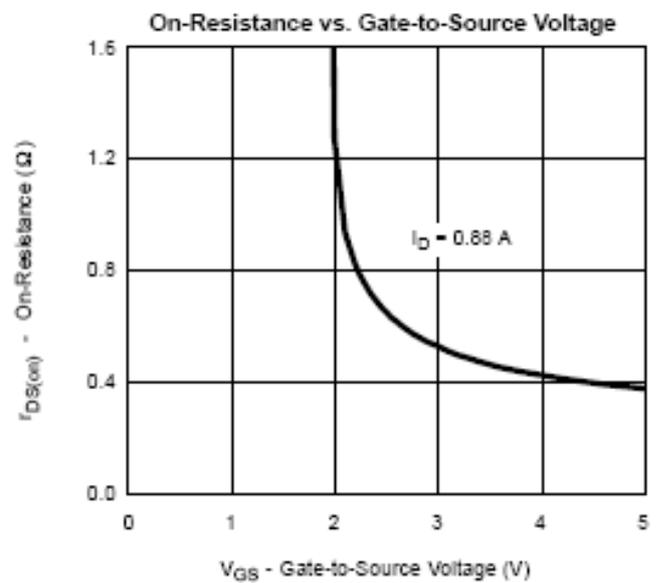
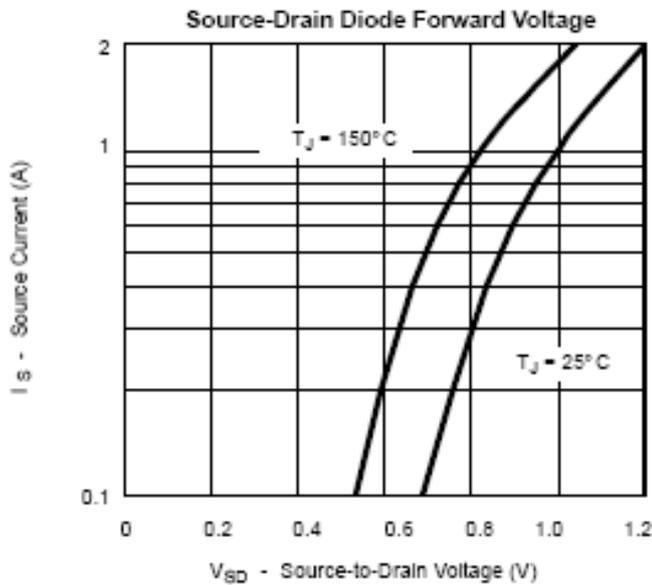
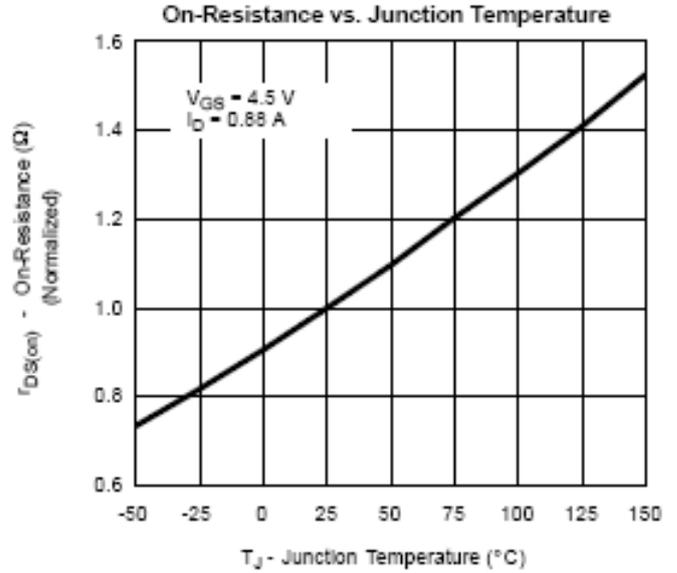
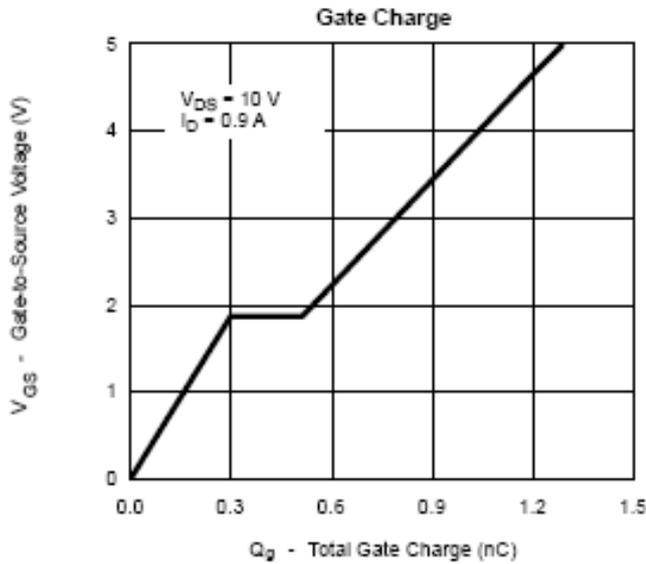
TYPICAL CHARACTERISTICS (P-Channel)





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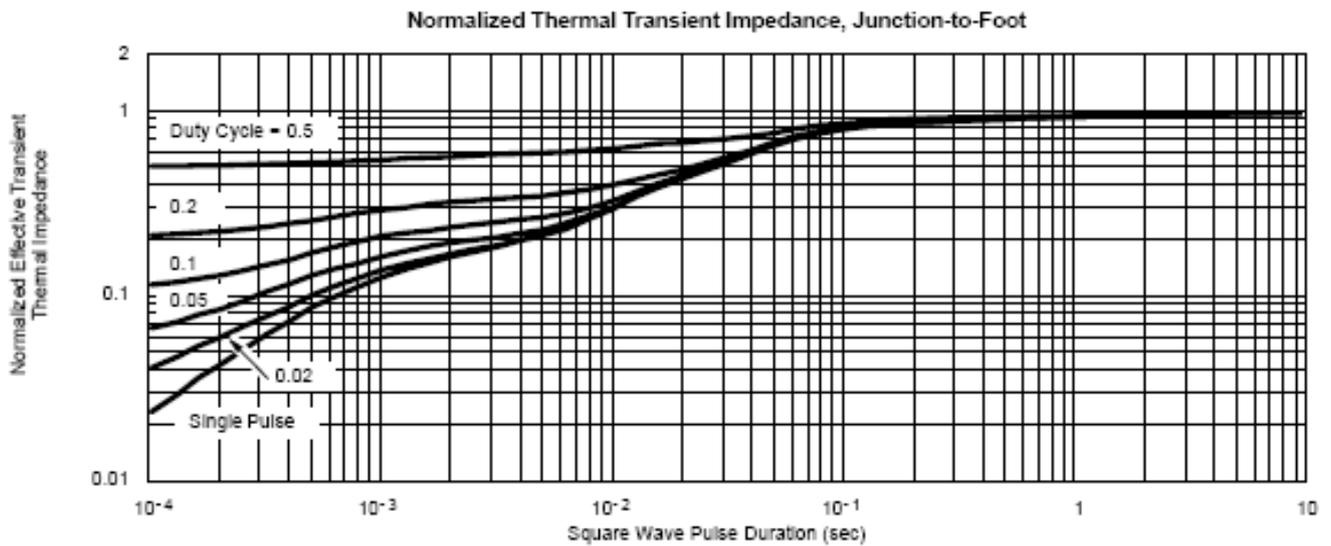
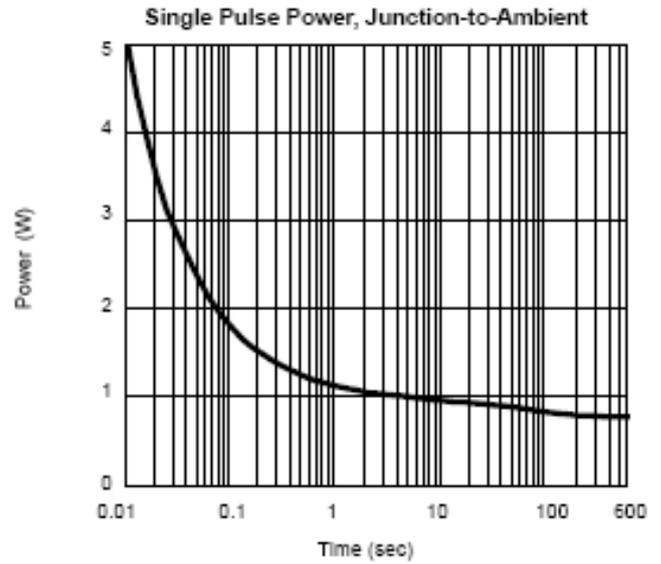
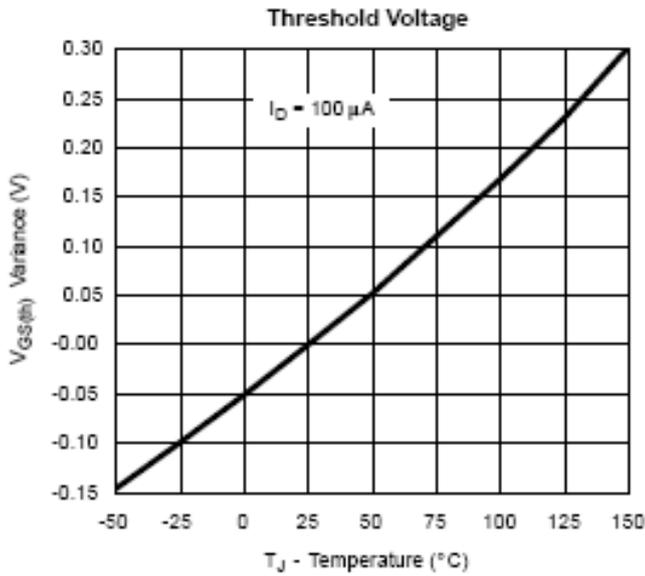
TYPICAL CHARACTERISTICS (P-Channel)





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