



SPN3055

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN3055 is the N-Channel logic 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. These devices are particularly suited for low voltage application, such as DC/DC converter and Desktop computer power management.

The package is universally preferred for commercial industrial surface mount applications

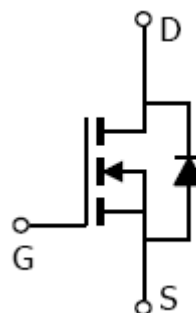
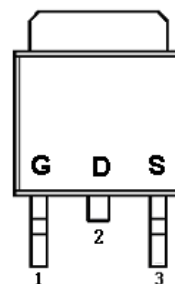
APPLICATIONS

- Power Management in Desktop Computer
- DC/DC Converter
- LCD Display inverter

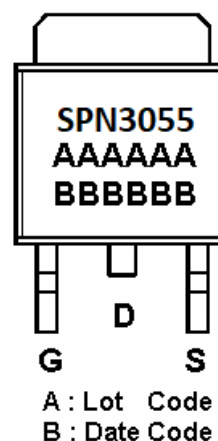
FEATURES

- ◆ 30V/12A, $R_{DS(ON)}=60m\Omega@V_{GS}=10V$
- ◆ 30V/6A, $R_{DS(ON)}=90m\Omega@V_{GS}=4.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ TO-252-2L package design

PIN CONFIGURATION (TO-252-2L)



PART MARKING





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PIN DESCRIPTION

Pin	Symbol	Description
1	G	Gate
2	D	Drain
3	S	Source

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN3055T252RGB	TO-252-2L	SPN3055

※ SPN3055T252RGB : Tape Reel ; Pb – Free ; Halogen - Free

ABSOLUTE MAXIMUM RATINGS

(T_A=25°C Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V _{DSS}	30	V
Gate –Source Voltage		V _{GSS}	±20	V
Continuous Drain Current(T _J =150°C)	T _A =25°C	I _D	12	A
	T _A =70°C		8	
Pulsed Drain Current		I _{DM}	20	A
Continuous Source Current(Diode Conduction)		I _S	12	A
Power Dissipation	T _A =25°C	P _D	40	W
	T _A =70°C		20	
Avalanche Energy with Single Pulse (T _J =25°C , L = 0.14mH , I _{AS} = 10A , V _D = 20V.)		E _{AS}	7	mJ
Operating Junction Temperature		T _J	-55/175	°C
Storage Temperature Range		T _{STG}	-55/175	°C
Thermal Resistance-Junction to Ambient		R _{θJA}	100	°C/W



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ELECTRICAL CHARACTERISTICS

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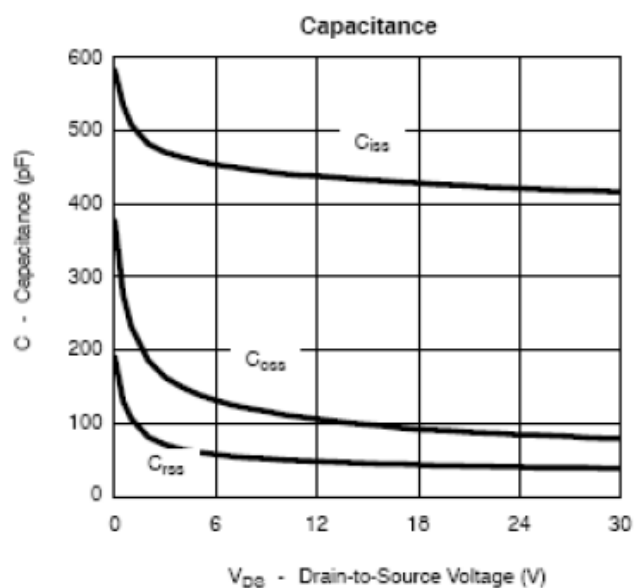
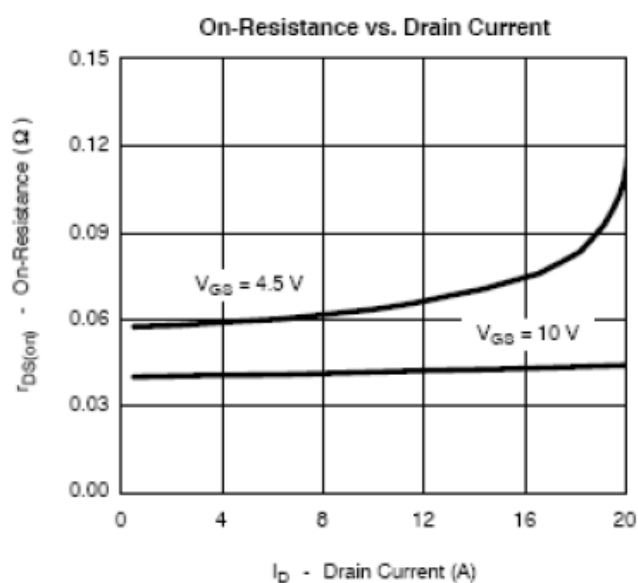
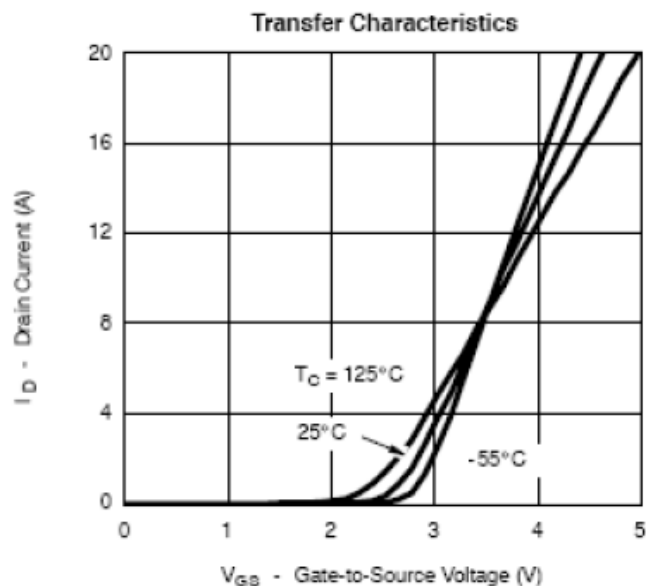
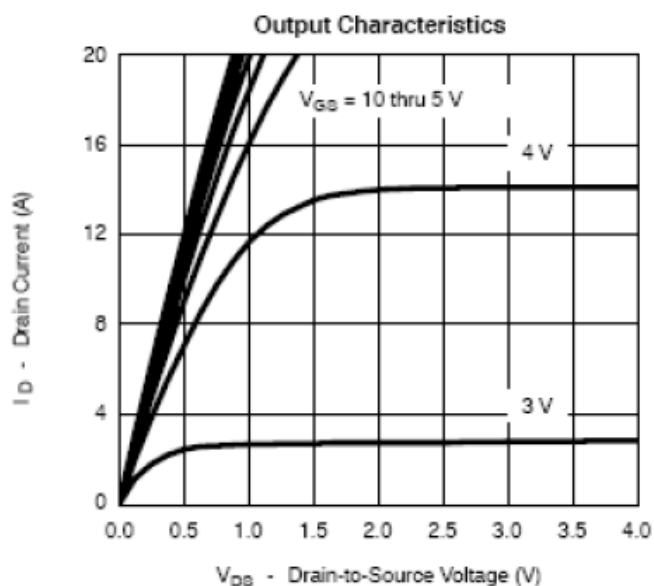
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250uA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	1.0		3.0	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	uA
		V _{DS} =24V, V _{GS} =0V T _J =55°C			10	
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =12A		0.050	0.060	Ω
		V _{GS} =4.5V, I _D =6A		0.067	0.090	
Forward Transconductance	g _{fs}	V _{DS} =10V, I _D =12A		20		S
Diode Forward Voltage	V _{SD}	I _S =6A, V _{GS} =0V		1.0	1.2	V
Dynamic						
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =10V I _D =12A		4.5	10	nC
Gate-Source Charge	Q _{gs}			0.8		
Gate-Drain Charge	Q _{gd}			1.0		
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V f=1MHz		240		pF
Output Capacitance	C _{oss}			110		
Reverse Transfer Capacitance	C _{rss}			17		
Turn-On Time	t _{d(on)}	V _{DD} =15V, R _L =15Ω I _D =1.0A, V _{GEN} =10V R _G =6Ω		8	20	nS
	t _r			12	30	
Turn-Off Time	t _{d(off)}			17	35	
	t _f			8	20	



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TYPICAL CHARACTERISTICS

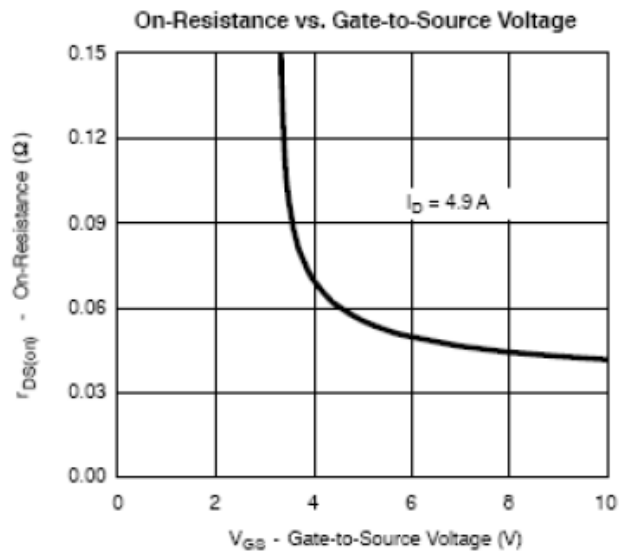
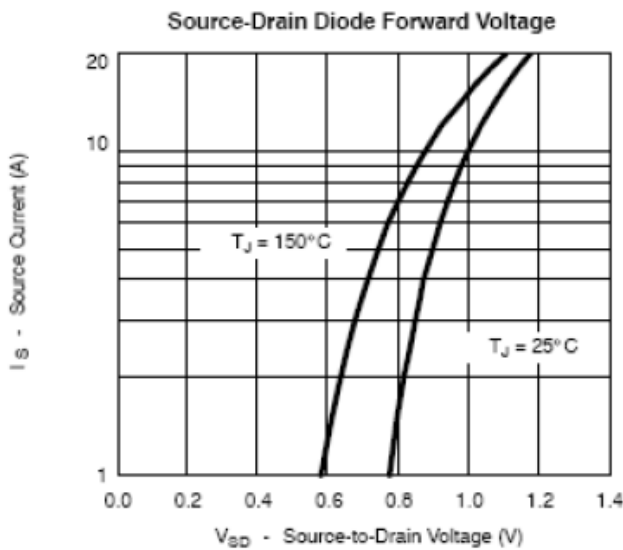
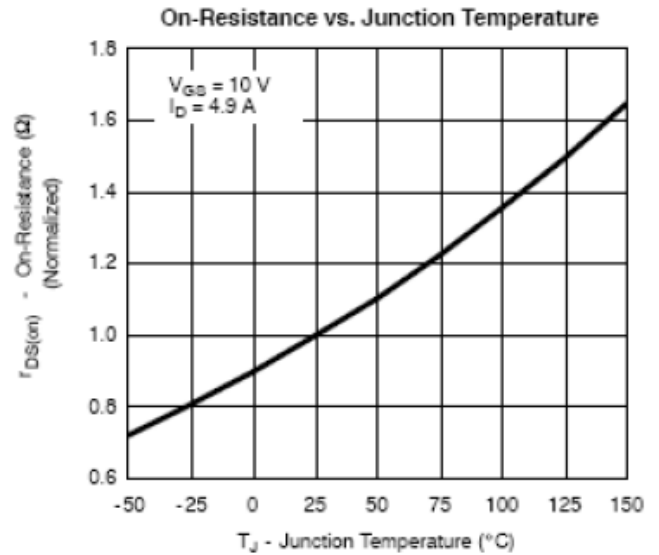
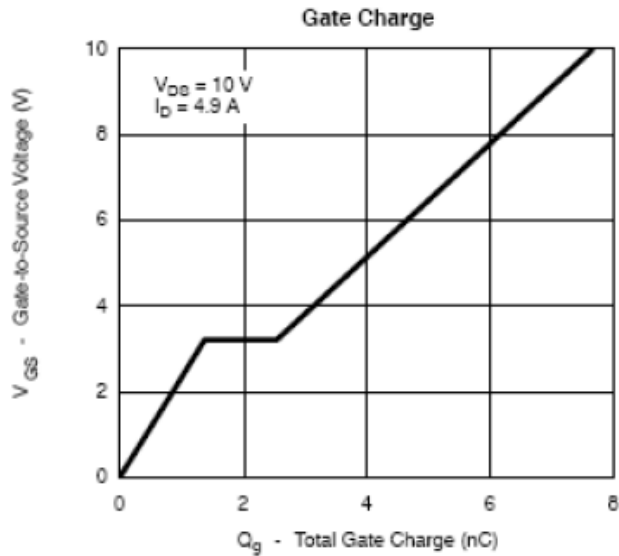




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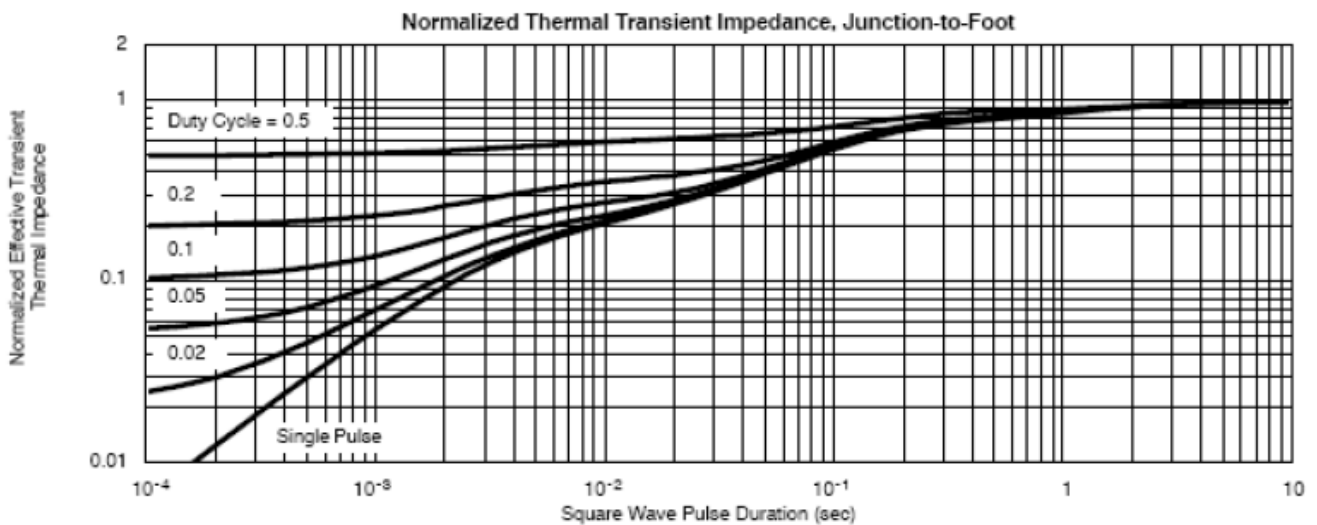
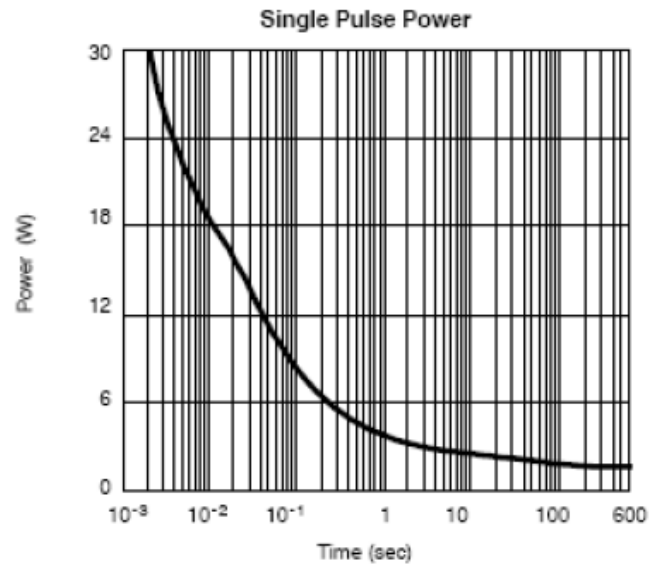
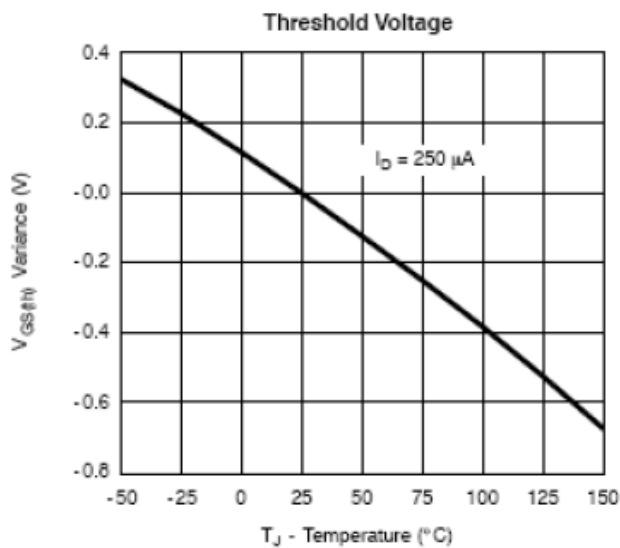




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TYPICAL CHARACTERISTICS





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