



SPN6001

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN6001 is the N-Channel enhancement mode field effect transistors that are produced using high cell density DMOS technology.

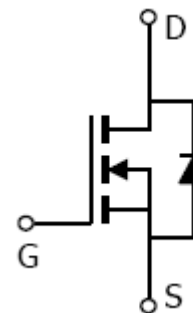
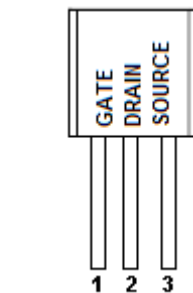
APPLICATIONS

- High efficiency SMPS
- AC adapter
- Electronic Lamp Ballast

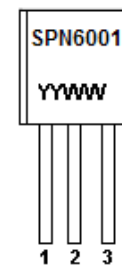
FEATURES

- ◆ 600V/1.0A , $R_{DS(ON)}=15\Omega@V_{GS}=10V$
- ◆ TO-92 package design
- ◆ Fast switch, Low Ciss, Low gate charge
- ◆

PIN CONFIGURATION(TO-92)



PART MARKING



Y : Year Code
W: Week Code



SPN6001

N-Channel Enhancement Mode MOSFET

PIN DESCRIPTION

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

ORDERING INFORMATION

Part Number	Package	Part Marking
SPN6001T92AGB	TO-92	SPN6001

※ Week Code : 01~53

※ SPN6001T92AGB : Tape Ammo ; Pb – Free ; Halogen - Free

ABSOLUTE MAXIMUM RATINGS

(TA=25°C Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		V _{DSS}	600	V
Gate –Source Voltage - Continuous		V _{GSS}	±20	V
Gate –Source Voltage - Non Repetitive (t _p < 50μs)		V _{GSS}	±40	V
Continuous Drain Current(T _J =150°C)	TA=25°C	I _D	1	A
Pulsed Drain Current (*)		I _{DM}	2.5	A
Power Dissipation	TA=25°C	P _D	3	W
Operating Junction Temperature		T _J	-55 ~ 150	°C
Storage Temperature Range		T _{STG}	-55 ~ 150	°C
Thermal Resistance-Junction to Ambient		R _{θJA}	120	°C/W

(*) Pulse width limited by safe operating area



SPN6001

N-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS

(T_A=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	600			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2.0		4.0	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =480V, V _{GS} =0V			10	uA
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =500mA			15	Ω
Forward On Voltage	V _{SD}	V _{GS} =0V, I _D =500mA			1	V
Forward Transconductance	G _{fs}	V _{DS} =40V, I _D =500 mA		0.8		S
Dynamic						
Total Gate Charge	Q _g	V _{DD} = 480 V, I _D = 1 A, V _{GS} = 10 V		6.1	7.2	nC
Gate-Source Charge	Q _{gs}			1.0		
Gate-Drain Charge	Q _{gd}			3.0		
Input Capacitance	C _{iss}	V _{DS} = 25 V, f = 1 MHz, V _{GS} = 0		178	221	pF
Output Capacitance	C _{oss}			19	27	
Reverse Transfer Capacitance	C _{rss}			3.7	4.8	
Turn-On Time	t _{d(on)}	V _{DD} = 300 V, I _D = 1 A R _G = 25Ω		15		nS
	t _r			46		
Turn-Off Time	t _{d(off)}			26		
	t _f			37		

(1) Pulsed: Pulse duration = 300 μs, duty cycle 2 %.

(2) Pulse width limited by maximum junction temperature.



SPN6001

N-Channel Enhancement Mode MOSFET

TYPICAL CHARACTERISTICS

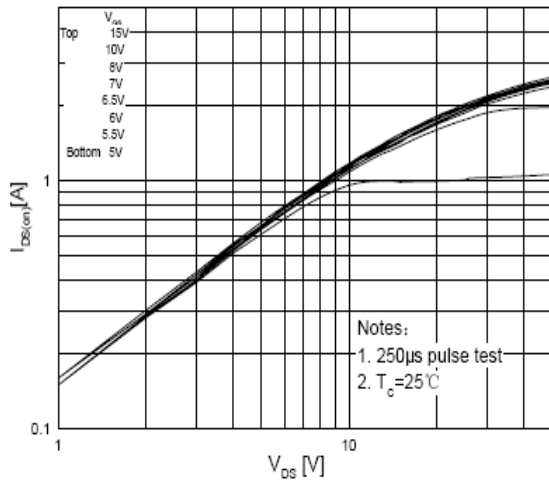


Fig. 1 Typical Output Characteristics

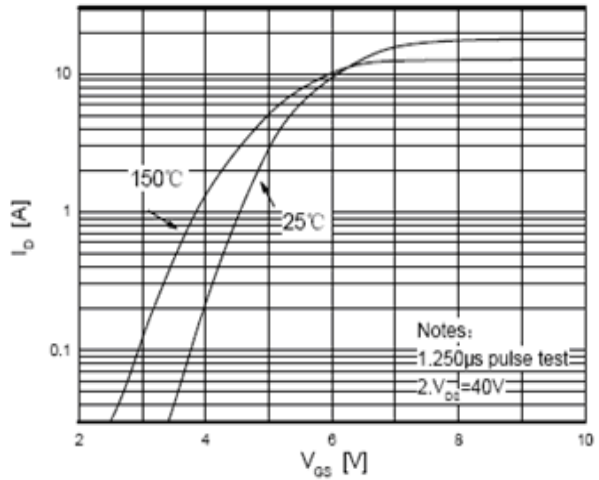


Fig. 2 Transfer Characteristics

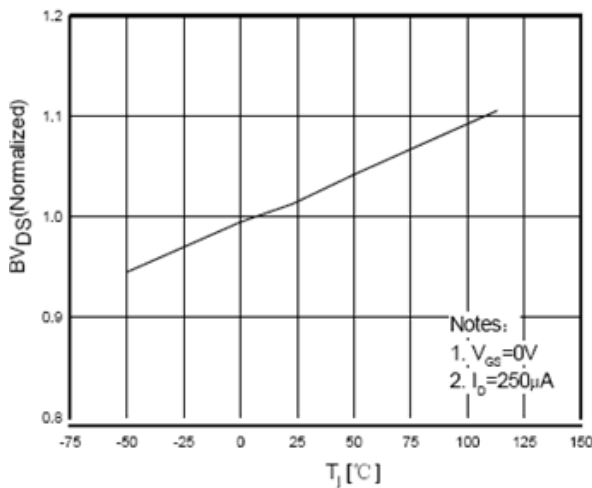


Fig. 3 BV_{dss} vs Junction Temperature

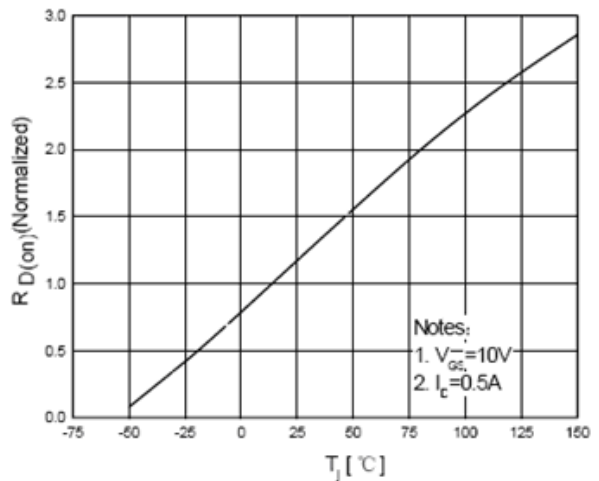


Fig. 4 On-Resistance vs Junction Temperature

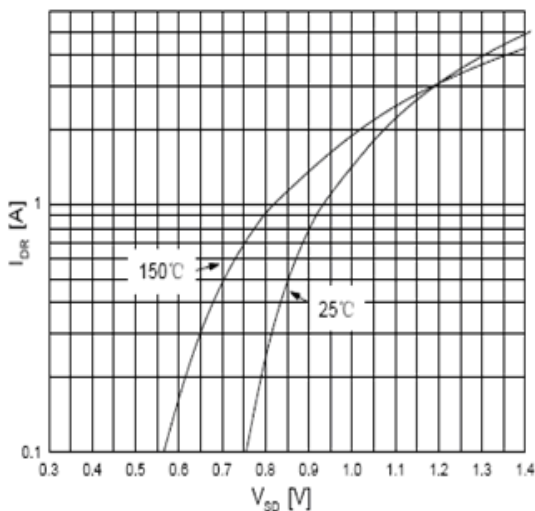


Fig. 5 Forward Characteristic of Reverse Diode

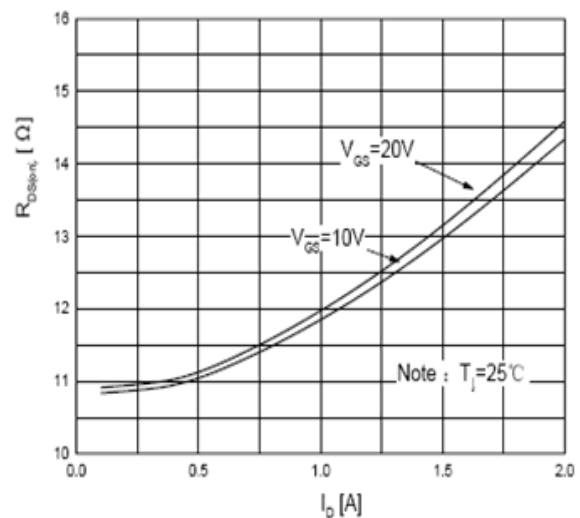


Fig. 6 On-Resistance vs Drain Current



SPN6001

N-Channel Enhancement Mode MOSFET

TYPICAL CHARACTERISTICS

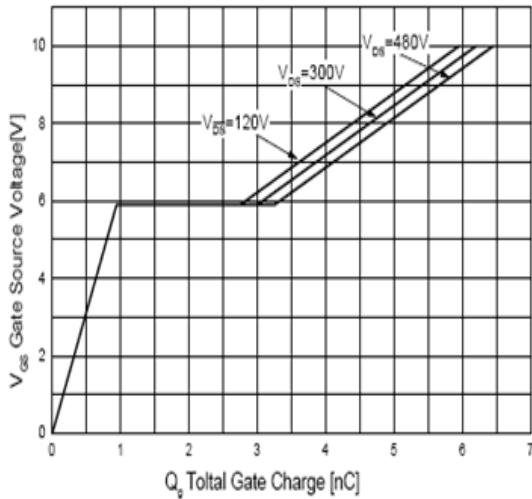


Fig. 7 Gate Charge Characteristics

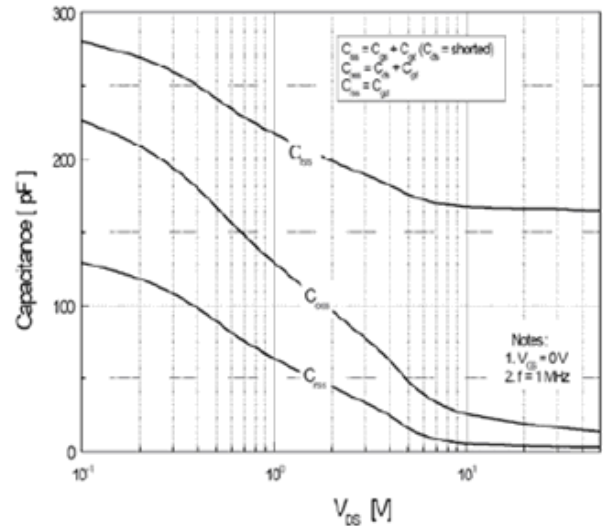


Fig. 8 Typical Capacitance Characteristics

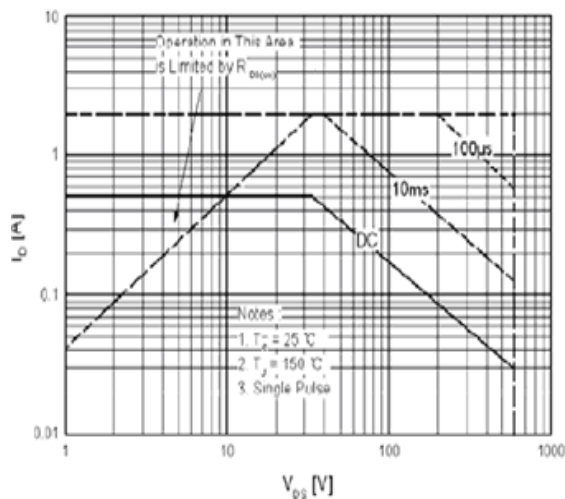


Fig. 9 Maximum Safe Operation Area

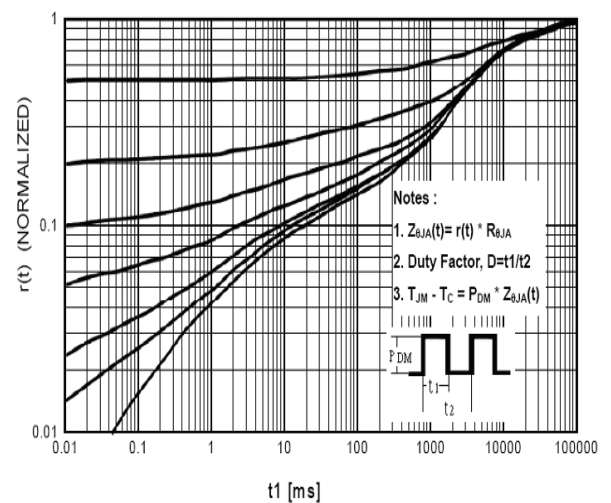


Fig. 10 Effective Transient Thermal Impedance



SPN6001

N-Channel Enhancement Mode MOSFET

Information provided is alleged to be exact and consistent. SYNC Power Corporation presumes no responsibility for the penalties of use of such information or for any violation of patents or other rights of third parties which may result from its use. No license is granted by allegation or otherwise under any patent or patent rights of SYNC Power Corporation. Conditions mentioned in this publication are subject to change without notice. This publication surpasses and replaces all information previously supplied. SYNC Power Corporation products are not authorized for use as critical components in life support devices or systems without express written approval of SYNC Power Corporation.

© The SYNC Power logo is a registered trademark of SYNC Power Corporation

© 2020 SYNC Power Corporation – Printed in Taiwan – All Rights Reserved

SYNC Power Corporation

7F-2, No.3-1 Park Street

NanKang District (NKSP), Taipei, Taiwan, 115, R.O.C

Phone: 886-2-2655-8178

Fax: 886-2-2655-8468

© <http://www.syncpower.com>