



SPN11T11

N-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPN11T11 is the N-Channel logic enhancement mode power field effect transistor which is produced using super high cell density DMOS trench technology. The SPN11T11 has been designed specifically to improve the over all efficiency of DC/DC converters using either synchronous or conventional switching PWM controllers. It has been optimized for low gate charge, low $R_{DS(ON)}$ and fast switching speed.

FEATURES

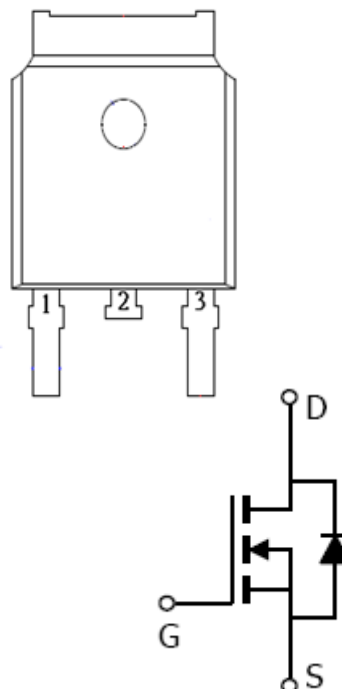
- ◆ 110V/12A, $R_{DS(ON)}=108m\Omega@V_{GS}=10V$
- ◆ 110V/12A, $R_{DS(ON)}=137m\Omega@V_{GS}=4.5V$
- ◆ High density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ TO-252-2L , package design

APPLICATIONS

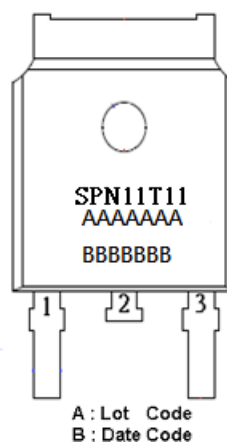
- Powered System
- DC/DC Converter
- Load Switch

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
SPN11T11T252RGB	TO-252-2L	SPN11T11

※ SPN11T11T252RGB : 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}	110	V
Gate –Source Voltage		V _{GSS}	±20	V
Continuous Drain Current(T _J =150°C)	T _C =25°C	I _D	12	A
	T _C =70°C		8.0	
Pulsed Drain Current		I _{DM}	24	A
Avalanche Current		I _{AS}	14	A
Power Dissipation @ T _C =25°C		P _D	40	W
Operating Junction Temperature		T _J	150	°C
Storage Temperature Range		T _{STG}	-55/150	°C
Thermal Resistance-Junction to Ambient		R _{θJA}	110	°C/W



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ELECTRICAL CHARACTERISTICS

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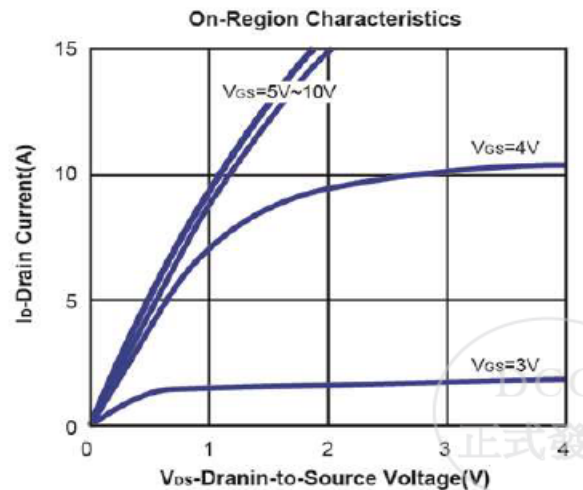
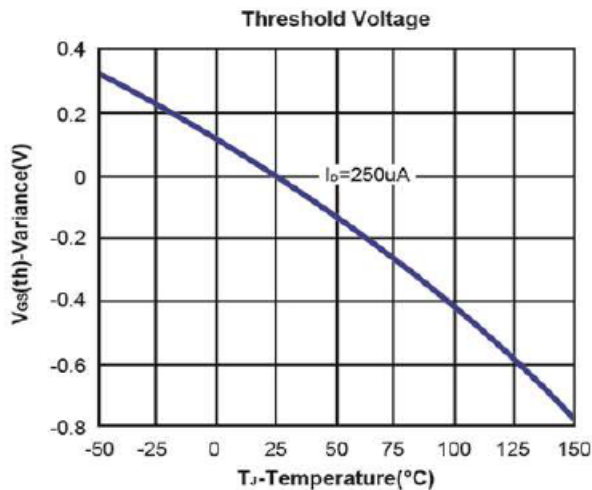
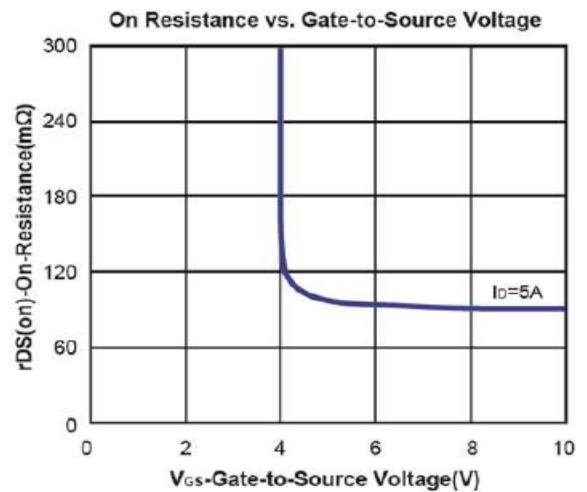
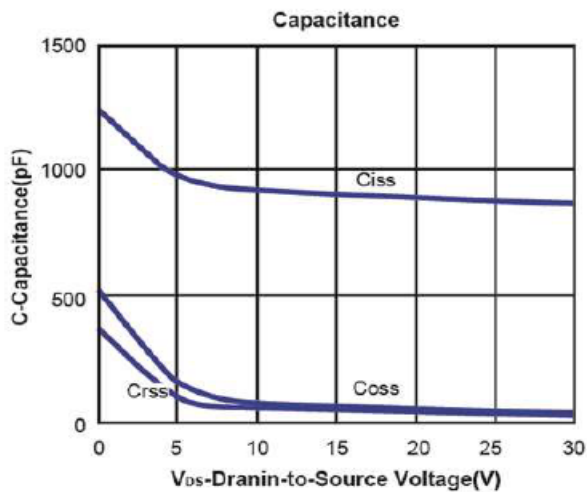
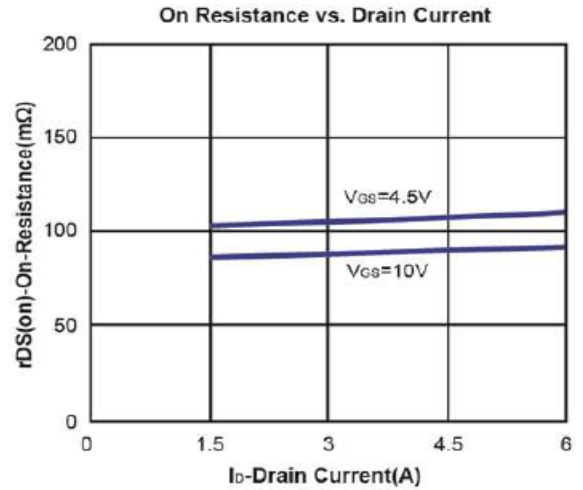
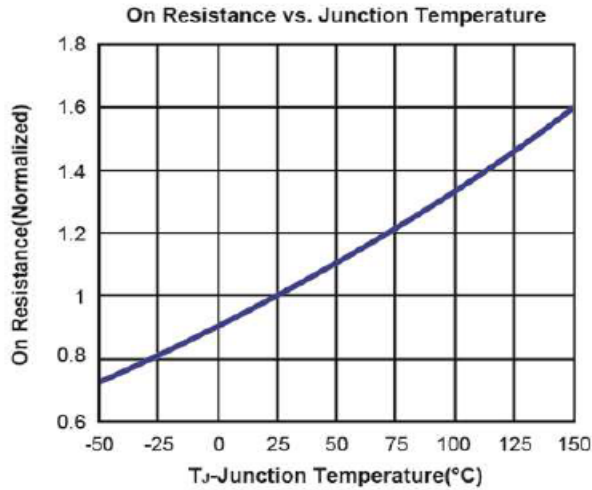
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	110			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1		3	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =80V, V _{GS} =0V			1	μA
On-State Drain Current	I _{D(on)}	V _{DS} ≥5V, V _{GS} =10V	12			A
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =5A		90	108	mΩ
		V _{GS} =4.5V, I _D =3A		105	137	mΩ
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V		0.9	1.2	V
Dynamic						
Total Gate Charge (10V)	Q _g	V _{DS} =50V, I _D =5A		22.3		nC
Total Gate Charge (4.5V)	Q _g			11.9		
Gate-Source Charge	Q _{gs}			4.8		
Gate-Drain Charge	Q _{gd}			6.4		
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V f=1MHz		895		pF
Output Capacitance	C _{oss}			56		
Reverse Transfer Capacitance	C _{rss}			43		
Turn-On Time	t _{d(on)}	V _{DD} =50V, I _D =5A, V _{GEN} =10V, R _G =1Ω		13.3		nS
	t _r			25.4		
Turn-Off Time	t _{d(off)}			27.5		
	t _f			16.2		



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TYPICAL CHARACTERISTICS

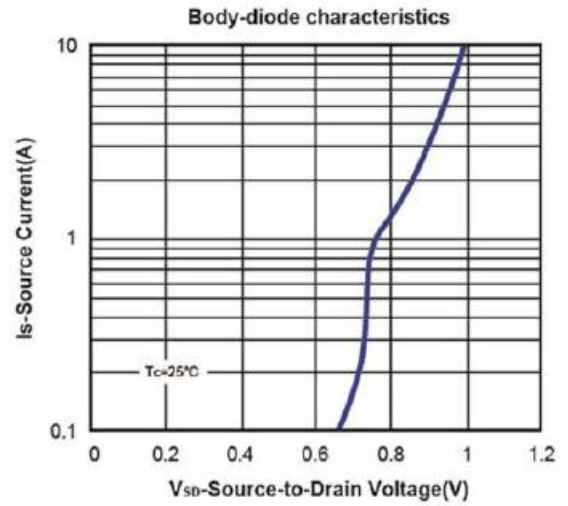
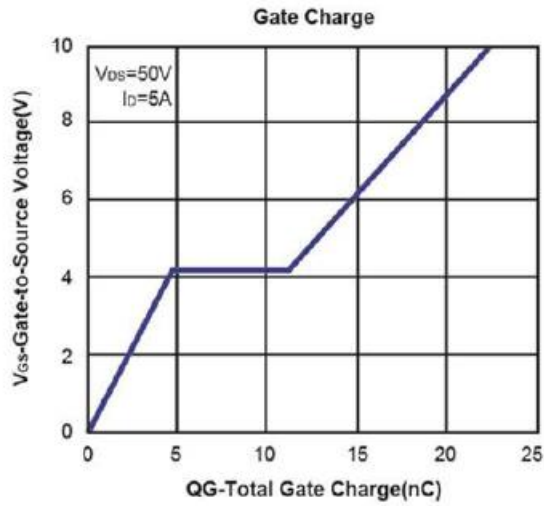




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TYPICAL CHARACTERISTICS





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