



SPP8835

P-Channel Enhancement Mode MOSFET

DESCRIPTION

The SPP8835 is the P-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. The SPP8835 has been designed specifically to improve the overall 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

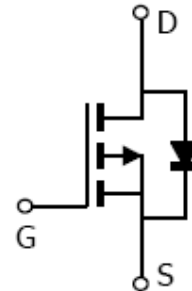
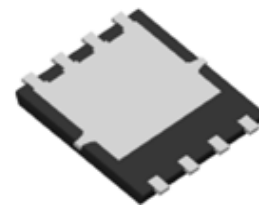
- ◆ -30V/-30A, $R_{DS(ON)}=3.3m\Omega@V_{GS}=-10V$
- ◆ -30V/-20A, $R_{DS(ON)}=5m\Omega@V_{GS}=-4.5V$
- ◆ Super high density cell design for extremely low $R_{DS(ON)}$
- ◆ Exceptional on-resistance and maximum DC current capability
- ◆ PPAK5X6 package design

APPLICATIONS

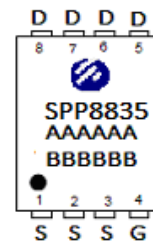
- High Frequency Synchronous Buck Converter
- DC/DC Power System
- Load Switch

PIN CONFIGURATION

PPAK5X6



PART MARKING



A : Lot Code
 B : Date Code
 (YY/MM/DD)



SPP8835

P-Channel Enhancement Mode MOSFET

PPAK5X6 PIN DESCRIPTION

Pin	Symbol	Description
1	S	Source
2	S	Source
3	S	Source
4	G	Gate
5	D	Drain
6	D	Drain
7	D	Drain
8	D	Drain

ORDERING INFORMATION

Part Number	Package	Part Marking
SPP8835DN8RGB	PPAK5X6	SPP8835

※ SPP8835DN8RGB : Tape Reel ; Pb – Free ; Halogen - Free

ABSOLUTE MAXIMUM RATINGS

($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Parameter	Symbol	Typical	Unit
Drain-Source Voltage	V_{DSS}	-30	V
Gate –Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	I_D	$T_A=25^{\circ}\text{C}$	-100
		$T_A=100^{\circ}\text{C}$	-82
Pulsed Drain Current	I_{DM}	-400	A
Avalanche Current	I_{AS}	-80	A
Single Pulse Avalanche Energy	EAS	320	mJ
Power Dissipation	P_D	83	W
Operating Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55/150	$^{\circ}\text{C}$
Thermal Resistance-Junction to Ambient ($t \leq 10\text{s}$)	$R_{\theta JA}$	55	$^{\circ}\text{C}/\text{W}$



SPP8835

P-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS

(TA=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.2		-2.5	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V$			-1	uA
		$V_{DS}=-24V, V_{GS}=0V, T_J=100^\circ C$			-10	
On-State Drain Current	$I_{D(on)}$	$V_{DS}\geq -5V, V_{GS}=-10V$			-100	A
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-30A$		2.6	3.3	mΩ
		$V_{GS}=-4.5V, I_D=-20A$		3.8	5	
Forward Transconductance	g_{fs}	$V_{DS}=-10V, I_D=-3A$		20		S
Diode Forward Voltage	V_{SD}	$I_S=-1A, V_{GS}=0V$			-1	V
Dynamic						
Total Gate Charge	Q_g	$V_{DS}=-24V, V_{GS}=-10V$ $I_D=-10A$		148	210	nC
Gate-Source Charge	Q_{gs}			22		
Gate-Drain Charge	Q_{gd}			32		
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V$ $f=1MHz$		7950		pF
Output Capacitance	C_{oss}			982		
Reverse Transfer Capacitance	C_{rss}			500		
Turn-On Time	$t_{d(on)}$	$V_{DD}=-15V,$ $I_D=-10A, V_{GS}=-10V, R_G=5\Omega$		17	34	nS
	t_r			61	120	
Turn-Off Time	$t_{d(off)}$			200	400	
	t_f			113	220	



SPP8835 P-Channel Enhancement Mode MOSFET

TYPICAL CHARACTERISTICS

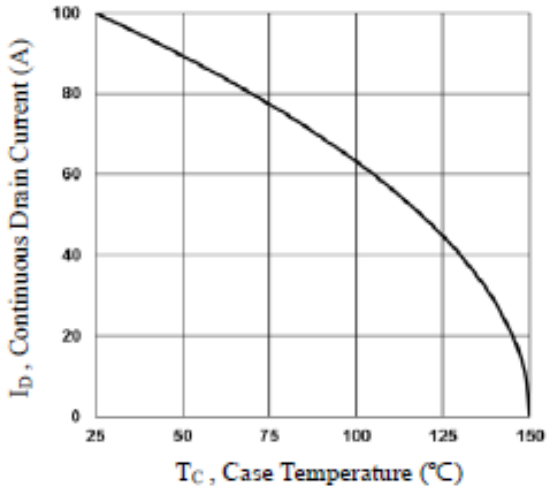


Fig.1 Continuous Drain Current vs. T_C

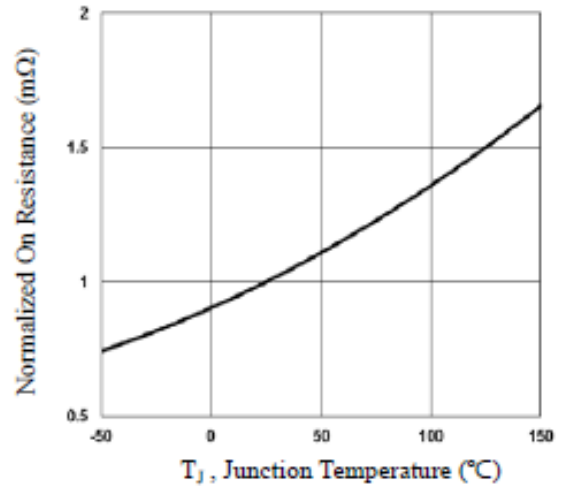


Fig.2 Normalized $R_{DS(on)}$ vs. T_J

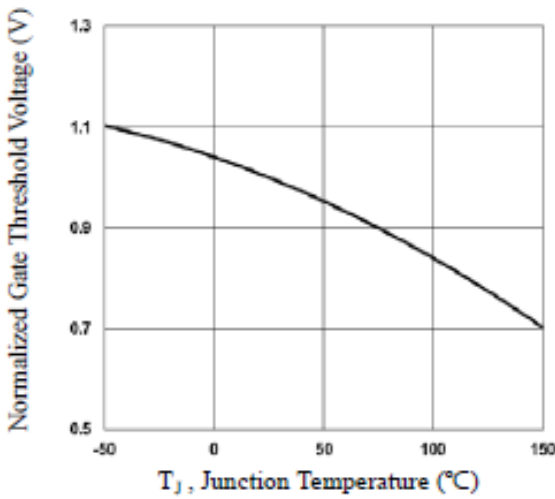


Fig.3 Normalized V_{th} vs. T_J

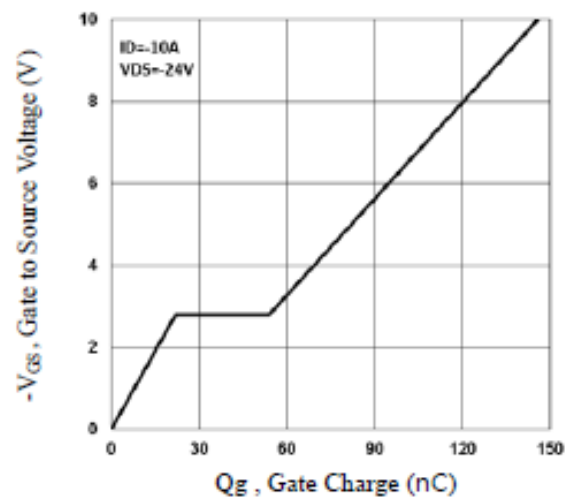
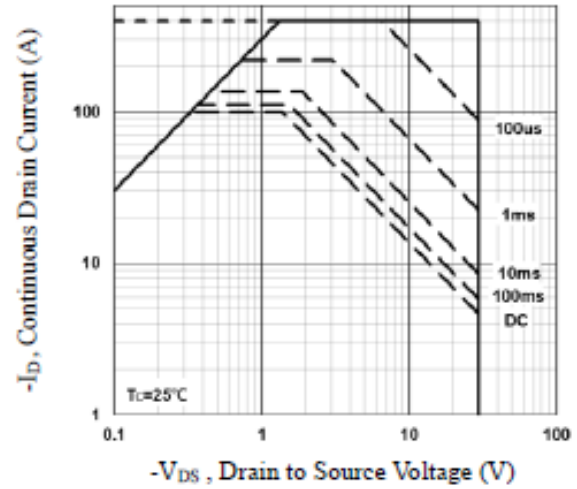
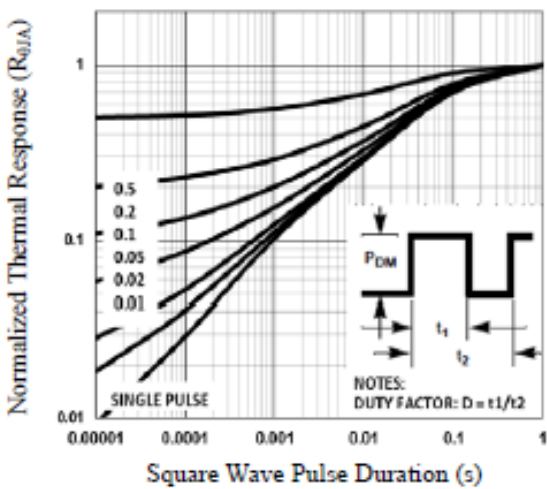


Fig.4 Gate Charge Waveform

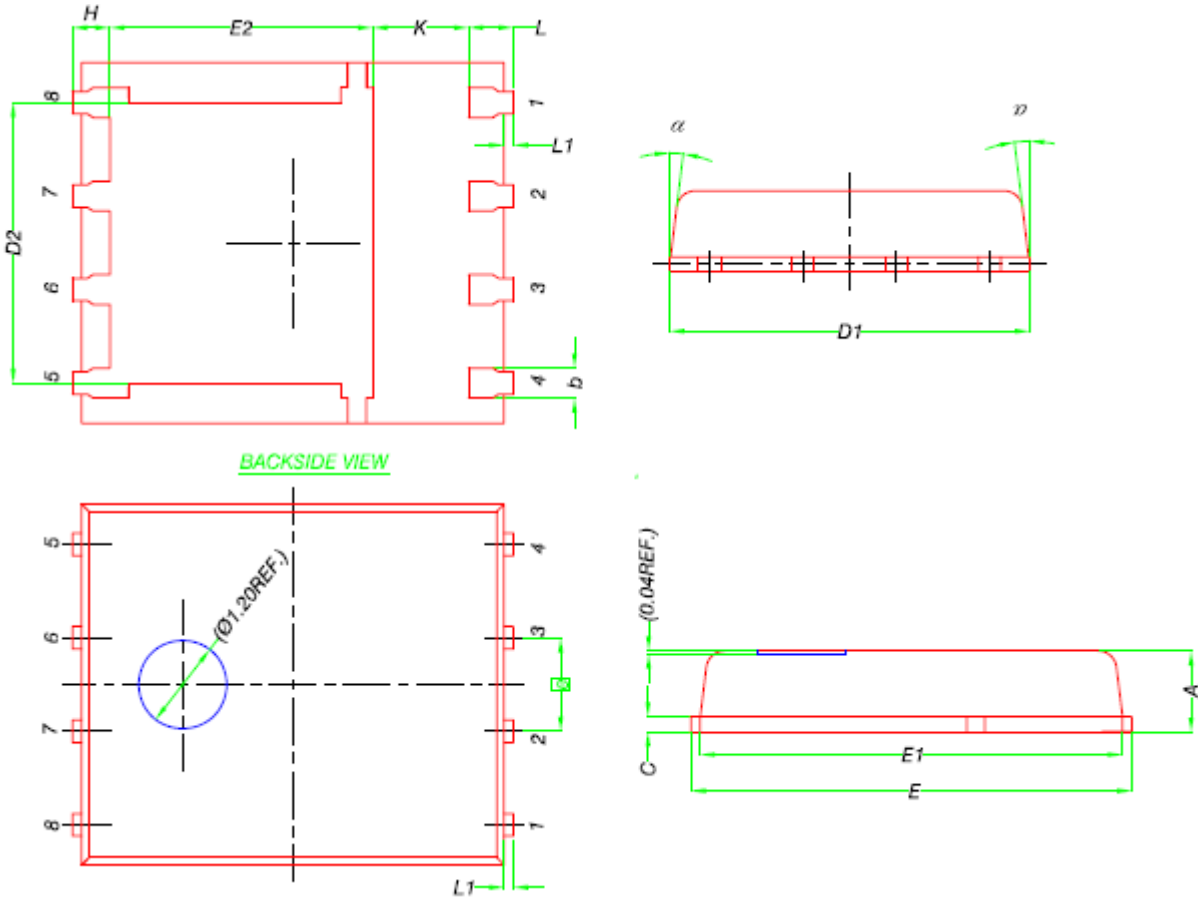




SPP8835

P-Channel Enhancement Mode MOSFET

PPAK5X6 PACKAGE OUTLINE



DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
b	0.33	0.41	0.51
C	0.20	0.25	0.30
D1	4.80	4.90	5.00
D2	3.61	3.81	3.96
E	5.90	6.00	6.10
E1	5.70	5.75	5.80
E2	3.38	3.58	3.78
e	1.27 BSC		
H	0.41	0.51	0.61
K	1.10	-	-
L	0.51	0.61	0.71
L1	0.06	0.13	0.20
α	0°	-	12°



SPP8835

P-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

© 2017 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

Phone: 886-2-2655-8178

Fax: 886-2-2655-8468

© <http://www.syncpower.com>