



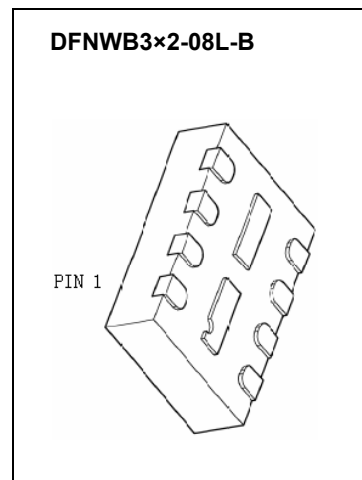
CJHD4P02F P-channel MOSFET and Schottky Barrier Diode

FEATURES

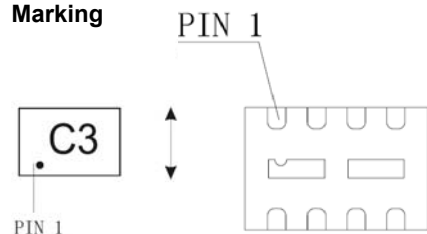
- Featuring a MOSFET and Schottky Diode
- Independent Pinout to Each Device to Ease Circuit Design
- Ultra Low V_F Schottky

Applications

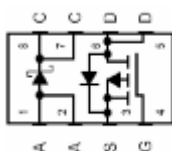
- Li-Ion Battery Charging
- High Side DC-DC Conversion Circuits
- High Side Drive for Small Brushless DC Motors
- Power Management in Portable, Battery Powered Products



Marking



pin connections:



MOSFET MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	-20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current	-2.1	A
I_{DM}	Drain Current-Pulsed	-7	A
P_D	Power Dissipation	1.1	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	110	$^\circ\text{C/W}$

SCHOTTKY DIODE MAXIMUM RATINGS($T_a= 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Limits	Unit
V_{RRM}	Peak repetitive reverse voltage	20	V
V_R	DC Blocking voltage	20	V
I_F	Average rectified forward current	2.2	A

MOSFET ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-16V, V _{GS} = 0V			-1	μA
Gate –Source leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = -250μA	-0.6		-1.2	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -2.1A			155	mΩ
		V _{GS} = -2.5V, I _D = -1.7A			240	mΩ
Forward Transconductance	g _{FS}	V _{DS} = -10V, I _D = -1.7A		5.0		S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -10V, V _{GS} = 0V, f = 1.0 MHz			300	pF
Output Capacitance	C _{oss}				150	pF
Reverse Transfer Capacitance	C _{rss}				50	pF
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{GS} = -4.5V V _{DD} = -16V, I _D = -2.1A, R _G =2.5Ω,			12	ns
Turn-On Rise Time	t _r				25	ns
Turn-Off Delay Time	t _{d(off)}				50	ns
Turn-Off Fall Time	t _f				40	ns
Total Gate Charge	Q _{G(TOT)}	V _{DS} = -10V, I _D = -2.1A, V _{GS} =-4.5V		3.0	6.0	nC
Threshold gate charge	Q _{G(TH)}			0.2		nC
Gate-Source Charge	Q _{GS}			0.5		nC
Gate-Drain Charge	Q _{GD}			0.9		nC
Drain-Source Diode Characteristics and Maximun Ratings						
Forward Diode Voltage	V _{SD}	V _{GS} = 0V, I _S = -2.1A			-1.15	V

SCHOTTKY DIODE ELECTRICAL CHARACTERISTICS (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Forward voltage	V_{F1}		0.425		V	$I_F = 0.1A$
	V_{F2}		0.480			$I_F = 0.5A$
	V_{F3}			0.575		$I_F = 1A$
Reverse current	I_{R1}			1	μA	$V_R = 10V$
	I_{R2}			5	μA	$V_R = 20V$