

FOD3120 and FOD3150

HIGH SPEED MOSFET/IGBT GATE DRIVE OPTOCOUPLERS

Fairchild's Offering

The FOD3120 and FOD3150 are 2.5A and 1.0A output current gate drive optocouplers capable of driving 1200V/20A IGBTs and MOSFETs in solar inverters, motor drives and induction heating applications. These optocouplers offer best-in-class common mode rejection (CMR) making the application more immune to noise. With tight pulse width distortion (100ns), leading to smaller filters and improved power efficiency, these devices also offer a 1414V peak working voltage to accommodate switching of 1200V IGBTs.

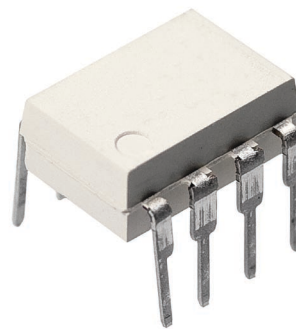
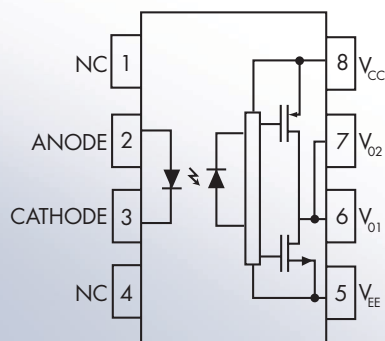
These MOSFET gate drive optocouplers complement Fairchild's offering in the discrete power MOSFET and IGBT line of products, providing Fairchild customers with one stop shopping from the logic control portion of the circuit to the isolated gate driver to the power MOSFET. This combined solution converts the mW to kW providing electrical isolation between the primary and secondary circuits.

Features & Benefits

- Wide operating voltage range of 15V to 30V
- High output current capability:
 - FOD3120 – 2.5A
 - FOD3150 – 1.0A
- 5000V isolation voltage rating
 - 1414V (peak) working voltage (UIORM)
- High common mode immunity:
 - FOD3120 – 35,000 V/ μ s minimum
 - FOD3150 – 20,000 V/ μ s minimum
- Low supply currents (I_{CCH} , I_{CC1})
 - FOD3120 – 3.8mA maximum
 - FOD3150 – 5mA maximum
- >8mm creepage and clearance distance
 - Lead spacing option 'T', through-hole, DIP packaging
 - Lead spacing option 'TS', surface mount, DIP packaging

Applications

- Solar inverters
- Motor drives
- Induction cooking applications



For datasheets, application notes, samples and more, please visit: www.fairchildsemi.com

Isolated Gate Drive-Cross Reference					
Fairchild	Avago	Sharp	Toshiba	NEC	Vishay
FOD3120	HCPL-3120	PC925L0NSZ0F	-	PS9552	-
FOD3120	HCPL-T250	-	-	-	-
FOD3150	HCPL-3150	PC923L0NSZ0F	TLP250	PS9553	VO3150
FOD3150	HCPL-3140	PC924L0NSZ0F	TLP351	-	-
FOD3180	HCPL-3180	-	TLP350	-	-
FOD3181	-	-	TLP250	-	-

Supplier	Part Number	Min. Peak Load Current (A)	PWD Max. (ns)	T _{PLH} Min. (ns)	T _{PLH} Max. (ns)	Abs Max Peak Output Current Max. (A)	I _{OL} Min. (A)	I _{OH} Min. (A)	I _{FLH} Max. (mA)	I _{COH} Max. (μA)	I _{CC1} Max. (μA)	UVLO- Min. (V)	UVLO- Max. (V)	UVLO+ Min. (V)	UVLO+ Max. (V)	Power Supply Voltage Max. (V)	Working Voltage Max. (V)	CMH CML Min. (V/μs)
Fairchild	FOD3120	2.5	100	150	400	3	-2.0	2.0	5	3.8	3.8	10	12	11.5	13.5	30	1414	35000
Best in Class Competitor Part	>1A Rated Devices	2.5	300	100	500	2.5	-2.0	2.0	5	5	5	9.5	12	11	13.5	30	1414*	25000

* Only available with wide body DIP package version.
Fairchild's FOD3120 specifications outperform the competition.

Fairchild: Your mW to Kw Converter Solution

With the introduction of the isolated MOSFET driver, Fairchild now offers a complete solution that converts low power logic levels to high power mains levels.

- TinyLogic®
- FOD3120, FOD3150, FOD3180 or FOD3181 isolated gate drive optocoupler
- PowerTrench® MOSFET

Safety Agency Certifications

- UL 1577 approved
 - File#: E90700, Volume 2
 - UL approval comes standard with all Fairchild optocouplers
- VDE approved EN60747-5-2
 - File#: 40018398 for FOD3120, FOD3150
 - Order option 'V' for certification
 - >8mm creepage/clearance with ordering option 'TV' or 'TSV'