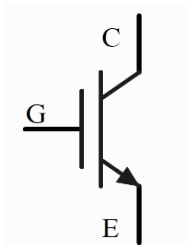


1FSD08110 Preliminary Datasheet



1FSD08110



Features

- di/dt+ V_{CE} Short circuit protection
- Digital active clamp
- Multi- level Turn off
- Soft shutdown
- UVLO
- Plug & play

Typical Applications

- HVDC
- Wind power converters
- Industrial Motor Drivers
- Railroad power supply

Absolute Maximum Ratings

Parameters	Symbol	Min	Typ	Max	Unit	Remarks
Supply voltage	V_{CC}		15	16	V	
Gate peak current	I_{GPEAK}			110	A	
Output power				8	W	$T_A < 85^\circ C$
Switching frequency	f			5	kHz	
Collector emitter voltage	V_{CE}			3.3	kV	
Isolation test voltage	$V_{isol IO}$	8			kV	Primary to secondary side
Operating temperature	T_{op}	-40		+85	$^\circ C$	
Storage temperature	T_{stg}	-40		+85	$^\circ C$	

Electrical Characteristics

Power	Symbol	Min	Typ	Max	Unit	Remarks
Supply current I	I_{cc}		0.15		A	No load

Supply voltage	V_{CC}	14.5	15	15.5	V	
Coupling capacitance	C_{io}		9.5		pF	Primary to secondary side
Gate turn on voltage	V_{Gon}		15		V	
Gate turn off voltage	V_{Goff}		-9.5		V	
Short Circuit Protection						
V_{CE} detects short circuit protection						
V_{CE} threshold	V_{REF_SC}		10.2		V	
Response time			8		us	
Soft shutdown time			4		us	
di/dt detects short circuit protection						
Response time			3		us	
Soft shutdown time			4		us	
Under-voltage protection						
Under-voltage threshold			12.7		V	
Timing Characteristics						
Turn on delay	t_{don}		500		ns	
Turn off delay	t_{doff}		500		ns	
Rise time	t_r		15		ns	
Fall time	t_f		12		ns	
Faults feedback time			30		ms	
Faults blocking time			90		ms	
Electrical Isolation						
Test voltage ($V_{ACrms,50Hz,60S}$)			8		kV	Primary to Secondary side
Creepage distance			24		mm	Primary to secondary side
Clearance distance			23		mm	Primary to secondary side

Gate Characteristics

Module	R _{Gon} (Ω)	R _{Goff1} (Ω)	R _{Goff2} (Ω)	C _{GE} (nF)
FZ2400R17HP4	0.7	0.6	5.3	NC
FZ3600R17KE3	0.6	1	5	NC
FZ1200R33HE3	0.6	0.6	5	220
FZ1500R33HL3	1	0.6	5	330
5SNA1200E330100	1.55	5	5	220

Pin Destination

Pin	Label	Remarks
1	GND	Ground
2	NC	Not connected
3	V _{CC}	15V supply voltage

Mechanical Dimensions (unit: mm)

