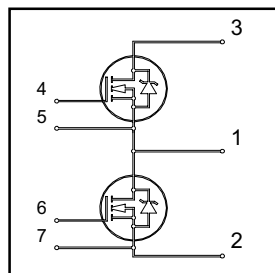


Features

- Advanced Process Technology
- Ultra Low On-Resistance
- Dynamic dv/dt Rating
- 175 °C Operating Temperature
- Fast Switching
- Fully Avalanche Rated



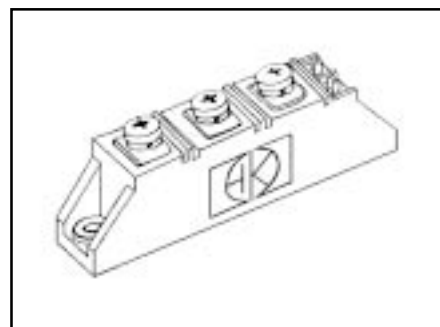
$$V_{DSS}=100V$$

$$R_{DS(on)}=0.009\Omega$$

$$I_D=170A$$

Benefits

- Increased operating efficiency
- Direct mounting to heatsink
- Performance optimized for power conversion: UPS, SMPS, Welding, Mortor Control
- Lower EMI, requires less snubbing



Absolute Maximum Ratings

	Parameter	Max.	Units
I_D @ $T_c=25^\circ C$	Continuous Drain Current, $V_{GS}@10V$	170	A
I_D @ $T_c=100^\circ C$	Continuous Drain Current, $V_{GS}@10V$	120	
I_{DM}	Pulsed Drain Current	670	
P_D @ $T_c=25^\circ C$	Power Dissipation	580	W
	Linear Derating Factor	3.8	W/°C
V_{GS}	Gate- to- Source Voltage	± 30	V
E_{AS}	Single Pulse Avalanche Energy	1350	mJ
I_{AR}	Avalanche Current	100	A
E_{AR}	Repetitive Avalanche Energy	58	mJ
dv/dt	Peak Diode Recovery dv/dt	2.3	V/ns
T_J	Operating Junction Temperature Range	-55 to +175	°C
T_{STG}	Storage Temperature Range	-55 to +175	

Thermal / Mechanical Characteristics

	Parameter	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction-to- Case- IGBT	-	0.26	°C/W
$R_{\theta JC}$	Thermal Resistance, Junction-to- Case- Diode	-	0.36	
$R_{\theta CS}$	Thermal Resistance, Case-to- Sink- Module	0.1	-	
	Mouting Torque, Case-to-Heatsink	-	4.0	N.m
	Mouting Torque, Case-to-Terminal 1,2 & 3	-	3.0	
	Weight of Module	100	-	g

FP150TA10U



Electrical Characteristics @ T_J=25°C(unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source Breakdown Voltage	100	—	—	V	V _{GS} =0V, I _D =250μA
DV _{(BR)DSS/DTJ}	Breakdown Voltage Temp. Coefficient	—	0.11	—	V/°C	Reference to 25°C, I _D =250μA
R _{DS(on)}	Static Drain-to-Source On-Resistance	—	—	0.009	Ω	V _{GS} =10V, I _D =100A
V _{GS(th)}	Gate Threshold Voltage	3.0	—	5.0	V	V _{DS} =10V, I _D =250μA
g _{fe}	Forward Transconductance	52	—	—	S	V _{DS} =50V, I _D =100A
I _{DSS}	Drain-to-Source Leakage Current	—	—	25	μA	V _{DS} =100V, V _{GS} =0V
		—	—	250		V _{DS} =80V, V _{GS} =0V, T _J =125°C
I _{GSS}	Drain-to-Source Forward Current	—	—	100	nA	V _{GS} =30V
	Drain-to-Source Reverse Current	—	—	-100		V _{GS} =-30V
Q _g	Total Gate Charge	—	260	390	nC	I _D =100A
Q _{gs}	Gate-to-Source Charge	—	49	74		V _{DS} =80V
Q _{gd}	Gate-to-Drain (Miller) Charge	—	160	250		V _{GS} =10V
t _{d(on)}	Turn - On Delay Time	—	24	—	nS	V _{DD} = 50V
t _r	Rise Time	—	270	—		I _D = 100A
t _{d(off)}	Turn - Off Delay Time	—	45	—		R _G =1.03Ω
t _f	Fall Time	—	140	—		V _{GS} = 10V
L _D	Internal Drain Inductance	—	5.0	—	nH	Between lead,6mm from package and center of die
L _S	Internal Source Inductance	—	13	—		
C _{iss}	Input Capacitance	—	6790	—	pF	V _{GS} = 0V
C _{oss}	Output Capacitance	—	2470	—		V _{DS} = 25V
C _{rss}	Reverse Transfer Capacitance	—	990	—		f=1.0MHz
C _{oss}	Output Capacitance	—	10740	—		V _{GS} =0V, V _{DS} =1.0V, f=1.0MHz
C _{oss}	Output Capacitance	—	1180	—		V _{GS} =0V, V _{DS} =80V, f=1.0MHz
C _{oss eff.}	Effective Output Capacitance	—	2210	—		V _{GS} =0V, V _{DS} =0V to 80V

Dynamic Characteristics - T_J=125°C (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	—	—	174	A	MOSFET symbol showing the integral reverse p-n junction diode
I _{SM}	Pulsed Source Current (Body Diode)	—	—	670		
V _{SD}	Diode Forward Voltage	—	—	1.3	V	T _J =25°C, I _S =100A, V _{GS} =0V
t _{rr}	Diode Reverse Recovery Time	—	220	330	nS	T _J =25°C, I _F =100A
Q _{rr}	Diode Reverse Recovery Charge	—	1640	2460	nC	di/dt=100A/μs
t _{on}	Forward Turn-On Time	Intrinsic turn-on time is negligible (turn-on is dominated by L _S +L _D)				