

- Free-wheeling diodes for HTS solid-state switches in combination with inductive load
- Soft recovery characteristics
- High peak current capability
- Short recovery time

Note: The model number contains coded information about voltage, current and turn-on behavior. The first digits stand for the voltage in kV, the last digit before the dash indicates the topology (0 = standard without blocking diode, 1 = with integrated blocking diode). The digits after the dash indicate the current in Amperes x10. Special features are coded by the letters after a second dash. **Example FDA 60-180:** FDA = Fast Diode Assembly, 6 = 6 kV, 0 = Standard, 180 = 1800 Ampere

Model [sorted by dimensions]	Description / Comment • Preferred stock type ○ Limited stock X Not for new development	Dimensions [mm ³]	Voltage [kV]	Pk. Current [A]
FDA 60-180	• Especially for HTS 61-40, HTS 61-240-SI and 61-160-FI	78 x 76 x 25	6	1800
FDA 60-240	• Especially for HTS 61-40, HTS 61-240-SI and 61-160-FI	102 x 76 x 25	6	2400
FDA 100-75	•	84 x 35 x 30	10	750
FDA 100-150	•	84 x 35 x 30	10	1500
FDA 160-75	•	84 x 35 x 30	16	750
FDA 160-150	•	84 x 35 x 30	16	1500
FDA 200-75	•	101 x 35 x 30	20	750
FDA 200-150	•	101 x 35 x 30	20	1500
FDA 240-75	•	116 x 35 x 30	24	750
FDA 240-150	•	116 x 35 x 30	24	1500
FDA 300-75	•	141 x 35 x 30	30	750
FDA 300-150	•	141 x 35 x 30	30	1500
FDA 320-75	•	152 x 35 x 30	32	750
FDA 320-150	•	152 x 35 x 30	32	1500
FDA 350-150	•	205 x 35 x 30	35	1500
FDA 640-75	•	300 x 35 x 35	64	750
FDA 640-150	•	300 x 53 x 53	64	1500
FDA 800-75	•	400 x 35 x 35	80	750
FDA 800-150	•	400 x 53 x 53	80	1500
FDA 100-300	•	84 x 70 x 35	16	3000
FDA 160-300	•	103 x 70 x 35	16	3000
FDA 200-300	•	103 x 70 x 35	20	3000
FDA 240-300	•	116 x 70 x 35	24	3000
FDA 320-300	•	152 x 70 x 35	32	3000
FDA 640-300	•	300 x 70 x 35	64	3000
FDA 800-300	•	370 x 70 x 35	80	3000
FDA 1500-300	•	700 x 70 x 35	150	3000

Options

PT-HV	Pigtails for HV Connection: Flexible leads with cable lugs. Not recommended in extremely fast circuits.
UL94	Flame Retardant Casting Resin: Casting resin according to UL-94-VO. Minimum order quantity required. (2)
ITC	Increased Thermal Conductivity: Special moulding process to increase the thermal conductivity of the module. $P_{d(max)}$ will be increased by approx. 20-30%.
CF	Copper Cooling Fins d = 0.5 mm: Fin height 35 mm. Nickel plated. For air cooling with forced or natural convection as well as for liquid cooling with non-conductive coolants.
CF-1	Copper Cooling Fins d = 1 mm: Fin thickness 1.0 mm instead of 0.5 mm. The Max. Power Dissipation $P_{d(max)}$ will be increased by ~80%. For air or liquid cooling (e.g. Galden® or oil).
CF-X2	Copper Cooling Fins "XL": Fin area enlarged by factor 2. Recommended for natural air convection. No significant cooling power improvement in connection with forced air or liquid cooling.
CF-X3	Copper Cooling Fins "XXL": Fin area enlarged by factor 3. Recommended for natural air convection. No significant cooling power improvement in connection with forced air or liquid cooling.
CF-CS	Copper Cooling Fins with customized shape: Individual shape to meet specific OEM requirements. (2) Can be combined with options CF-1, CF-D and CF-S for increased cooling power.
CF-LC	Copper Cooling Fins for liquid cooling: Double fins, nickel plated copper, height 20 mm. For the immersion in oil tanks etc. Forced convection recommended. Combinable with opt. CF-S.
CF-D	Double Copper Cooling Fins: Approx. 100% more cooling power, approx. 2mm spacing between fins, forced convection recommended. Combinable with opt. CF-S, CF-X2, CF-X3 and CF-CS.
CF-S	Copper Cooling Fins: Semiconductors soldered on fins. Approx. 30% to 100% more cooling power (type depending). Combinable with options CF-D, CF-X2, CF-X3 and CF-CS.
CF-GRA	Non-isolated Cooling Fins made of graphite: Very light weight compared to copper at similar heat transfer, but reduced heat capacity. 0.5 or 1 mm thickness, height 35 mm.
CF-CER	Isolated Cooling Fins made of ceramics: Heat transfer properties similar to alumina. Forced convection recommended due to 2 mm spacing between fins. Height 35 mm.
CCS	Ceramic Cooling Surface: Top side of switching module made of ceramics. Heat transfer properties similar to alumina. Max. 20 kVDC isolation. Forced convection recommended.
CCF	Ceramic Cooling Flange: Bottom side of switching module made of a plano grinded ceramic plate. Integrated metal frame for uniform and safe contact pressure. Max. 40 kVDC isolation.
GCF	Grounded Cooling Flange: Cooling by a grounded base plate made of nickel plated copper. For medium power. Increased coupling capacitance. Isolation voltage up to 50 kVDC.
GCF-X2	Grounded Cooling Flange, Max. Continuous Power Dissipation increased by x2: Thermal resistance "Switch to Flange" reduced for twice the power capability.
GCF-W	Water Cooler for Grounded Cooling Flange: Flat water cooling plate attached to the grounded cooling flange GCF. With water inlet and outlet.
DLC	Direct Liquid Cooling: Internal liquid channel in direct contact with the power semiconductors. Very compact cooling solution for medium power. Non-conductive liquids only.
HI-REL	High Reliability / MIL Versions: Available on request.

Further information, data sheets and drawings are available on request. All data and specifications subject to change without notice.

REV 19-APRIL-2016