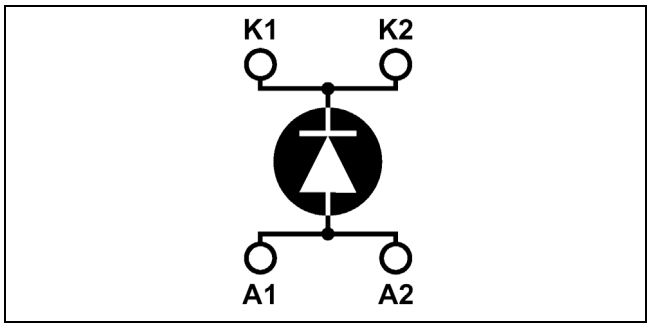
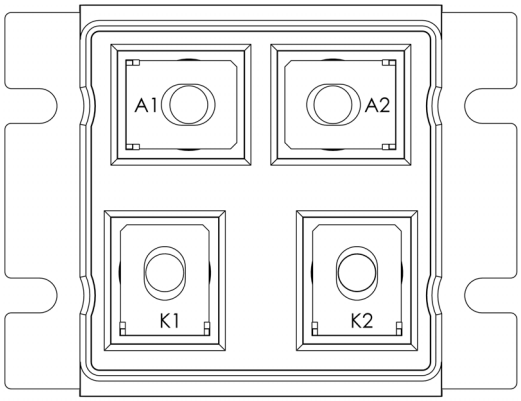
APTDF450U60G

Single diode Power Module

V_{CES} = 600V
I_C = 450A @ Tc = 80°C





Application

- Anti-Parallel diode
  - Switchmode Power Supply
  - Inverters
- Snubber diode
- Uninterruptible Power Supply (UPS)
- Induction heating
- Welding equipment
- High speed rectifiers
- Electric vehicles

Features

- Ultra fast recovery times
- Soft recovery characteristics
- Very low stray inductance
- High blocking voltage
- High current
- Low leakage current

Benefits

- Low losses
- Low noise switching
- Direct mounting to heatsink (isolated package)
- Low junction to case thermal resistance
- RoHS Compliant

Absolute maximum ratings

Symbol	*Parameter*			*Max ratings*	*Unit*
V_R	Maximum DC reverse Voltage			600	V
V_{RRM}	Maximum Peak Repetitive Reverse Voltage				
$I_{F(AV)}$	Maximum Average Forward Current	Duty cycle = 50%	T_c = 25°C	500	A
			T_c = 80°C	450	
$I_{F(RMS)}$	RMS Forward Current			850	
I_{FSM}	Non-Repetitive Forward Surge Current		T_j = 25°C	5000	

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on www.microsemi.com

All ratings @ T_j = 25°C unless otherwise specified

Electrical Characteristics

Symbol	*Characteristic*	*Test Conditions*		*Min*	*Typ*	*Max*	*Unit*
V_F	Diode Forward Voltage	I_F = 500A			1.4	1.8	V
		I_F = 1000A			1.7		
		I_F = 500A	T_j = 150°C			1.5	
I_{RM}	Maximum Reverse Leakage Current	V_R = 600V	T_j = 25°C			2500	µA
			T_j = 150°C			5000	
C_T	Junction Capacitance	V_R = 200V			825		pF

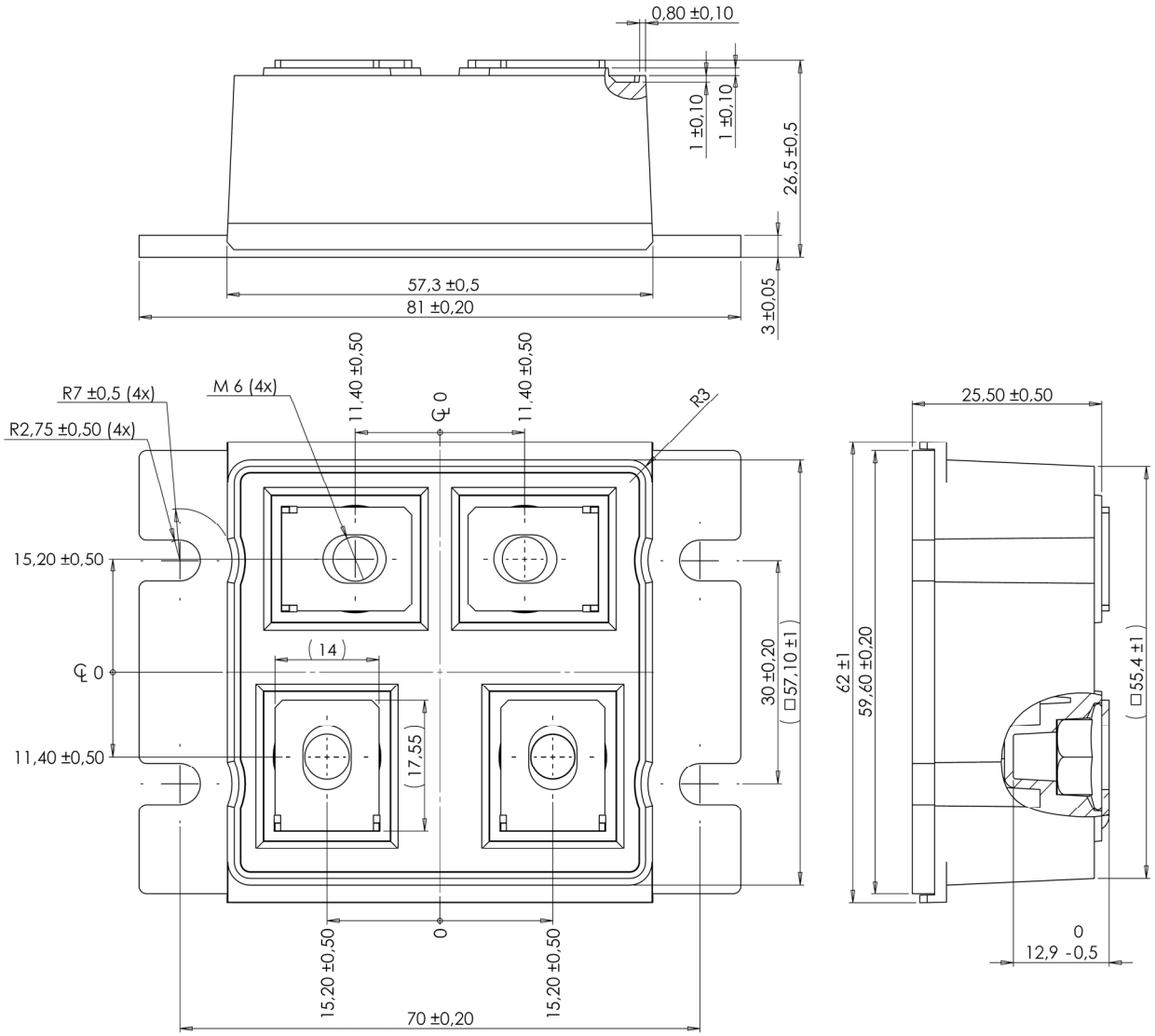
Dynamic Characteristics

Symbol	*Characteristic*	*Test Conditions*		*Min*	*Typ*	*Max*	*Unit*
t_{rr1}	Reverse Recovery Time	I_F=1A,V_R=30V di/dt = 15A/µs	T_j = 25°C		60	75	ns
t_{rr2}		I_F = 500A V_R = 350V di/dt=1000A/µs	T_j = 25°C		90	115	
t_{rr3}			T_j = 100°C		135	255	
t_{fr1}	Forward Recovery Time	I_F = 500A V_R = 350V di/dt=1000A/µs	T_j = 25°C		135		ns
t_{fr2}			T_j = 100°C		135		
I_{RRM1}	Reverse Recovery Current		T_j = 25°C		35	50	A
I_{RRM2}			T_j = 100°C		55	70	
Q_{rr1}	Reverse Recovery Charge		T_j = 25°C		1575	2875	nC
Q_{rr2}			T_j = 100°C		3715	8925	
V_{fr1}	Forward Recovery Voltage		T_j = 25°C		23		V
V_{fr2}			T_j = 100°C		23		
$d_{IM/dt}$	Rate of Fall of Recovery Current		T_j = 25°C		600		A/µs
			T_j = 100°C		400		

Thermal and package characteristics

Symbol	*Characteristic*			*Min*	*Typ*	*Max*	*Unit*
R_{thJC}	Junction to Case Thermal Resistance					0.08	°C/W
V_{ISOL}	RMS Isolation Voltage, any terminal to case t =1 min, 50/60Hz			4000			V
T_J	Operating junction temperature range			-40		150	°C
T_{STG}	Storage Temperature Range			-40		125	
T_C	Operating Case Temperature			-40		100	
Torque	Mounting torque	To heatsink	M5	2.5		3.5	N.m
		For terminals	M6	3		4	
Wt	Package Weight					250	g

LP4 Package outline (dimensions in mm)



DISCLAIMER

The information contained in the document (unless it is publicly available on the Web without access restrictions) is PROPRIETARY AND CONFIDENTIAL information of Microsemi and cannot be copied, published, uploaded, posted, transmitted, distributed or disclosed or used without the express duly signed written consent of Microsemi. If the recipient of this document has entered into a disclosure agreement with Microsemi, then the terms of such Agreement will also apply. This document and the information contained herein may not be modified, by any person other than authorized personnel of Microsemi. No license under any patent, copyright, trade secret or other intellectual property right is granted to or conferred upon you by disclosure or delivery of the information, either expressly, by implication, inducement, estoppels or otherwise. Any license under such intellectual property rights must be approved by Microsemi in writing signed by an officer of Microsemi.

Microsemi reserves the right to change the configuration, functionality and performance of its products at anytime without any notice. This product has been subject to limited testing and should not be used in conjunction with life-support or other mission-critical equipment or applications. Microsemi assumes no liability whatsoever, and Microsemi disclaims any express or implied warranty, relating to sale and/or use of Microsemi products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Any performance specifications believed to be reliable but are not verified and customer or user must conduct and complete all performance and other testing of this product as well as any user or customers final application. User or customer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the customer's and user's responsibility to independently determine suitability of any Microsemi product and to test and verify the same. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the User. Microsemi specifically disclaims any liability of any kind including for consequential, incidental and punitive damages as well as lost profit. The product is subject to other terms and conditions which can be located on the web at http://www.microsemi.com/legal/tnc.asp

Life Support Application

Seller's Products are not designed, intended, or authorized for use as components in systems intended for space, aviation, surgical implant into the body, in other applications intended to support or sustain life, or for any other application in which the failure of the Seller's Product could create a situation where personal injury, death or property damage or loss may occur (collectively "Life Support Applications").
Buyer agrees not to use Products in any Life Support Applications and to the extent it does it shall conduct extensive testing of the Product in such applications and further agrees to indemnify and hold Seller, and its officers, employees, subsidiaries, affiliates, agents, sales representatives and distributors harmless against all claims, costs, damages and expenses, and attorneys' fees and costs arising, directly or directly, out of any claims of personal injury, death, damage or otherwise associated with the use of the goods in Life Support Applications, even if such claim includes allegations that Seller was negligent regarding the design or manufacture of the goods.

Buyer must notify Seller in writing before using Seller's Products in Life Support Applications. Seller will study with Buyer alternative solutions to meet Buyer application specification based on Sellers sales conditions applicable for the new proposed specific part.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Discrete Semiconductor Modules ***category:***

Click to view products by Microchip ***manufacturer:***

Other Similar products are found below :

M252511FV DD260N12K-A DD380N16A DD89N1600K-A APT2X21DC60J APT58M80J B522F-2-YEC MSTC90-16 25.163.0653.1 25.163.2453.0 25.163.4253.0 25.190.2053.0 25.194.3453.0 25.320.4853.1 25.320.5253.1 25.326.3253.1 25.326.3553.1 25.330.1653.1 25.330.4753.1 25.330.5253.1 25.334.3253.1 25.334.3353.1 25.350.2053.0 25.352.4753.1 25.522.3253.0 T483C T484C T485F T485H T512F-YEB T513F T514F T554 T612FSE 25.161.3453.0 25.179.2253.0 25.194.3253.0 25.325.1253.1 25.326.4253.1 25.330.0953.1 25.332.4353.1 25.350.1653.0 25.350.2453.0 25.352.1453.0 25.352.1653.0 25.352.2453.0 25.352.5453.1 25.522.3353.0 25.602.4053.0 25.640.5053.0