Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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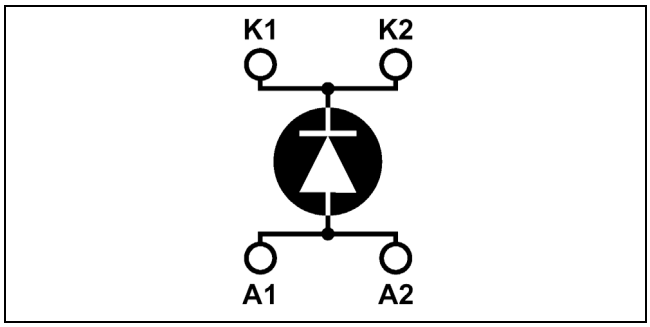
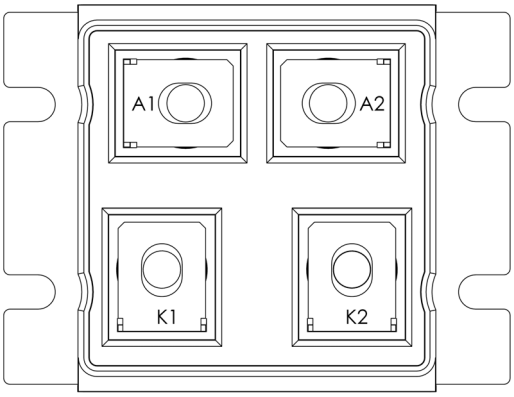
APTDF430U100G

Single diode Power Module

V_{CES} = 1000V
I_C = 430A @ 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			1000	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	430	
$I_{F(RMS)}$	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			2.0	2.3	V
		I_F = 1000A			2.5		
		I_F = 500A	T_j = 150°C			1.8	
I_{RM}	Maximum Reverse Leakage Current	V_R = 1000V	T_j = 25°C			2500	µA
			T_j = 150°C			5000	
C_T	Junction Capacitance	V_R = 200V			580		pF

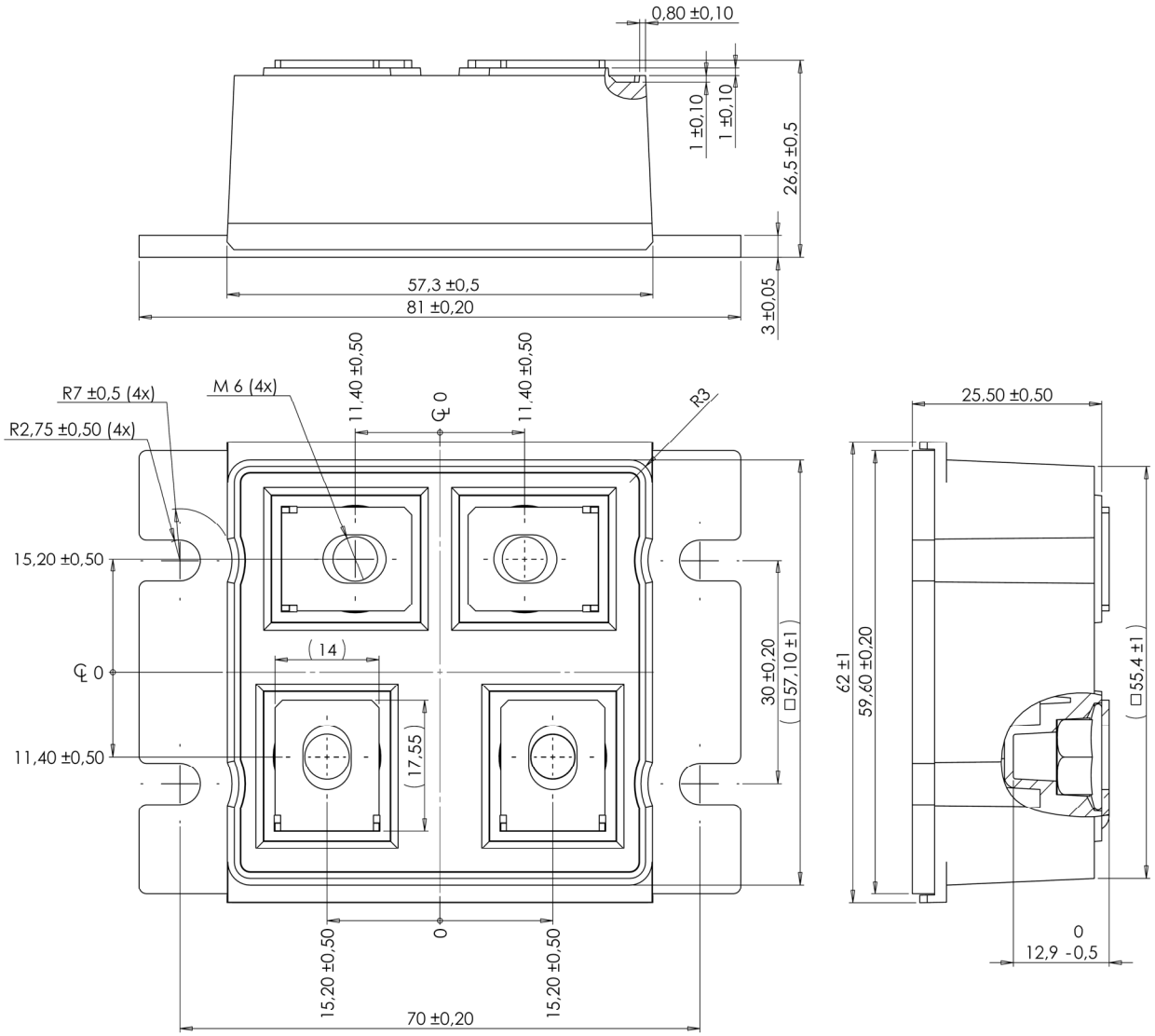
Dynamic Characteristics

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		80	95	ns
t_{rr2}		I_F = 500A V_R = 540V di/dt=1000A/µs	T_j = 25°C		100	120	
t_{rr3}			T_j = 100°C		200	300	
t_{fr1}	Forward Recovery Time	I_F = 500A V_R = 540V di/dt=1000A/µs	T_j = 25°C		135		ns
t_{fr2}			T_j = 100°C		200		
I_{RRM1}	Reverse Recovery Current		T_j = 25°C		35	50	A
I_{RRM2}			T_j = 100°C		65	85	
Q_{rr1}	Reverse Recovery Charge		T_j = 25°C		1.75	3	µC
Q_{rr2}			T_j = 100°C		6.5	12.8	
V_{fr1}	Forward Recovery Voltage		T_j = 25°C		31		V
V_{fr2}			T_j = 100°C		31		
$d_{IM/dt}$	Rate of Fall of Recovery Current		T_j = 25°C		1000		A/µs
			T_j = 100°C		500		

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)



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