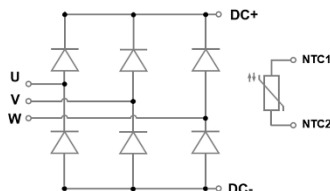
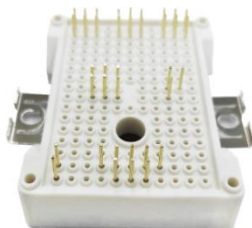


Product Summary

Product Type	V _{DS}	I _D	V _F	Package
ATD150C65FBEASY2B	650V	150A	2.2V	Easy 2B



Features

- Fast switching and soft reverse recovery characteristics
- Low forward voltage drops
- Low reverse recovery current
- Built-in NTC thermistor for temperature monitoring
- Al₂O₃ substrate for reinforced thermal management
- High Surge Current Capacity
- Lead free, RoHS compliant

Applications

- EV Chargers
- PV System
- Solid State Transformer (SST)
- UPS

Electrical Ratings

Absolute Maximum Ratings (Per Position), T_J=25°C, unless otherwise Specified

Parameter	Symbol	Conditions	Value	Unit
Repetitive Peak Reverse Voltage	V _{RRM}		600	V
Reverse Voltage	V _R	DC	600	V
Continuous Forward Current	I _F	δ = 0.5; T _H ≤ 56 °C; square-wave pulse	150	A
Repetitive Peak Forward Current	I _{FRM}	δ = 0.5 ; t _p = 25 μs; T _H ≤ 56 °C; square- wave pulse	300	A
Non-repetitive Peak Forward Current	I _{FSM}	t _p = 10 ms; T _J = 25 °C; sine-wave pulse;	1400	A
		t _p = 8.3 ms; T _J = 25 °C; Sine-wave pulse	1500	A
Operatin Junction Temperature	T _J	Operation	-40~150	°C
Storage temperature	T _{STG}	1.6mm (0.063") from case for 10s	-40~125	°C

Thermal Characteristics (Per Position)

Parameter	Symbol	Min	Typ	Max	Unit
Thermal resistance, junction-case	R _{thJC}		0.63		K/W

Electrical Characteristics @T_C=25°C, (Per Position) unless otherwise specified

Static Characteristics

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Diode forward voltage	V _F	I _F =150A, T _J =25°C		2.2	2.75	V
		I _F =150A, T _J =150°C		1.6	2.1	
Reverse current	I _R	V _R =600V, T _J =25°C			20	μA
		V _R =600V, T _J =125°C			2000	

Dynamic Characteristics (Per Position)

Parameter	Symbol	Test condition	Min	Typ	Max	Unit
Recovered Charge	Q _r	I _F = 150A; V _R =400 V; dI _F /dt = 400 A/μs; T _j = 25°C;		170		nC
		I _F = 150A; V _R =400 V; dI _F /dt = 400 A/μs; T _j = 125°C;		1280		
Reverse Recovery Time	t _{rr}	I _F = 2 A; V _R = 30 V; dI _F /dt = 100 A/μs; T _j = 25°C;			50	ns
		I _F = 150 A; V _R = 400 V; dI _F /dt = 400 A/μs; T _j = 25°C		42		
		I _F = 150 A; V _R = 400 V; dI _F /dt = 400 A/μs; T _j = 125°C		106		
Peak Reverse Recovery Current	I _{RM}	I _F = 150A; V _R = 400 V; dI _F /dt = 400 A/μs; T _j = 25°C		8.2		A
		I _F = 120A; V _R = 200 V; dI _F /dt = 400 A/μs; T _j = 125°C		24.4		A

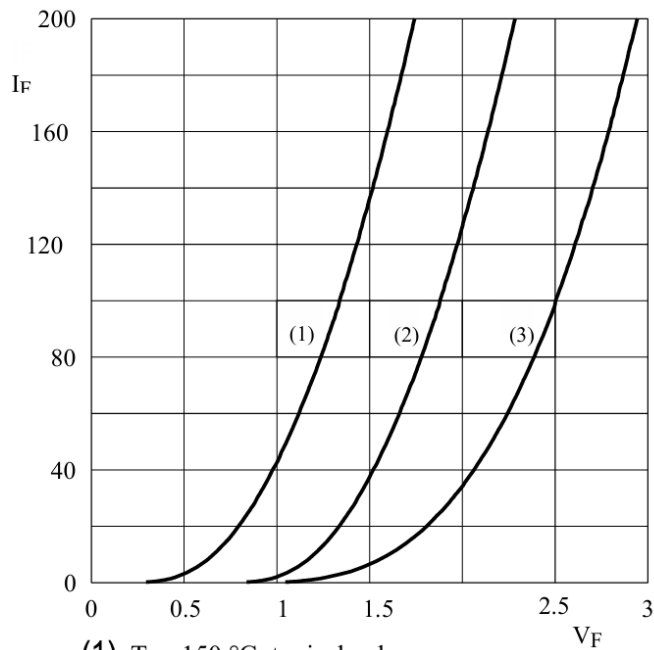
NTC Thermistor Characterization

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Rated Resistance	R _{NTC}	T _{NTC} = 25 °C		5		KΩ
Resistance Tolerance at 25°C	ΔR/R		-5		5	%
Beta Value(T2 = 50°C)	β _{25/50}			3375		K
Beta Value(T2 = 50°C)	β _{25/80}			3415		
Beta Value(T2 = 50°C)	β _{25/100}			3436		
Power Dissipation	P _{Max}				10	mW

Module Physical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Mounting torque	Ms	M4 screw and washer	2.0		2.3	Nm
Backside curvature					100	um
Weight	W			TBD		g
Case Isolation Voltage	V _{isol}	AC, 50 Hz, 1 min	3000			V
Comparative Tracking Index	CTI		200			mm
Clearance Distance		Terminal to Terminal		5.0		
		Terminal to Heatsink		10.0		
Creepage Distance		Terminal to Terminal		5.0		
		Terminal to Heatsink		11.5		

Typical Performance(curves)



(1) $T_j = 150\text{ }^{\circ}\text{C}$; typical values

(2) $T_j = 150\text{ }^{\circ}\text{C}$; maximum values

(3) $T_j = 25\text{ }^{\circ}\text{C}$; maximum values

Fig. 1 Forward current as a function of forward voltage

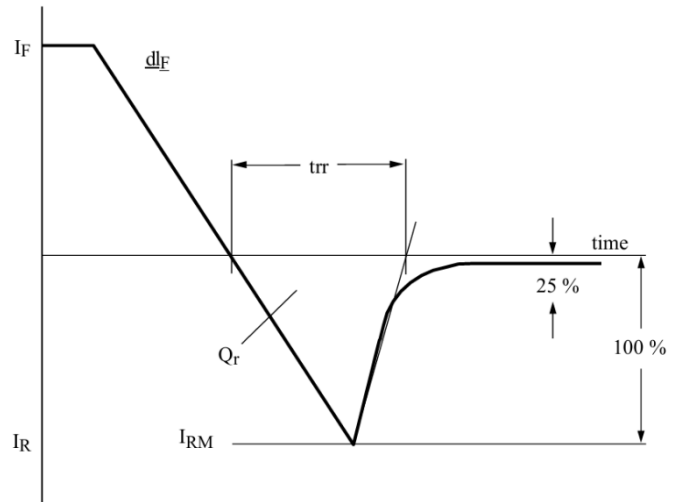
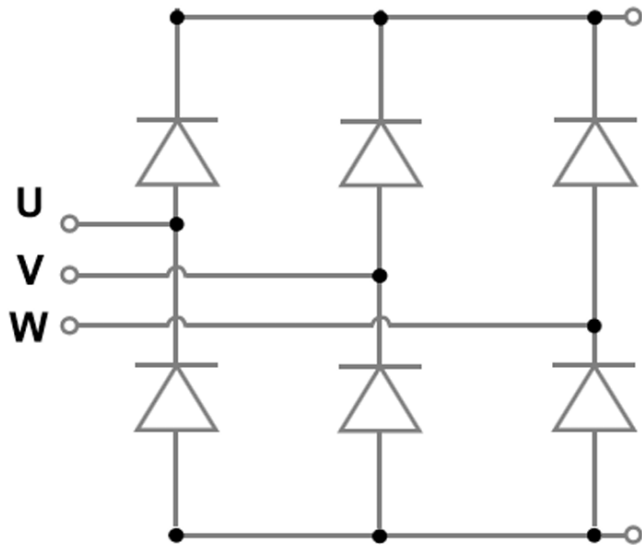
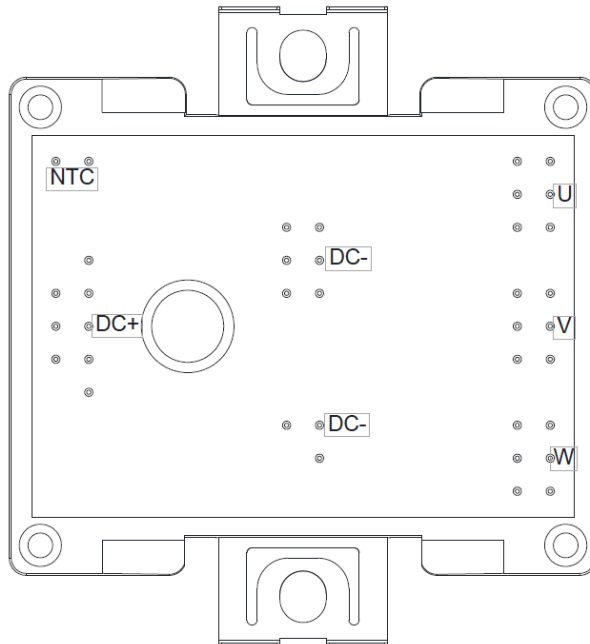


Fig. 2. Reverse recovery definitions; ramp

Internal Electrical Schematic



Pin Configuration



Package Outline Dimensions

