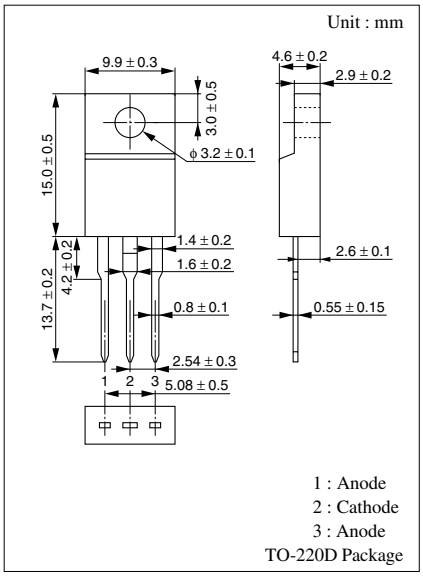
MA3D750, MA3D750A

Silicon epitaxial planar type (cathode common)

For switching power supply



■ Features

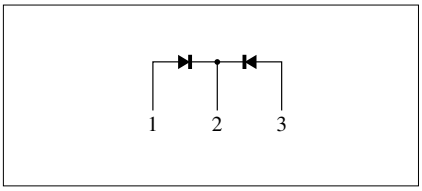
- Low forward rise voltage V_F
- TO-220D (Full-pack package) with high dielectric breakdown voltage > 5.0 kV
- Easy-to-mount, caused by its V cut lead end

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter		Symbol	Rating	Unit
Repetitive peak reverse voltage	MA3D750	V_{RRM}	40	V
	MA3D750A		45	
Average forward current		$I_{F(AV)}$	10	A
Non-repetitive peak forward surge current*		I_{FSM}	120	A
Junction temperature		T_j	–40 to +125	°C
Storage temperature		T_{stg}	–40 to +125	°C

Note) * : Half sine-wave; 10 ms/cycle

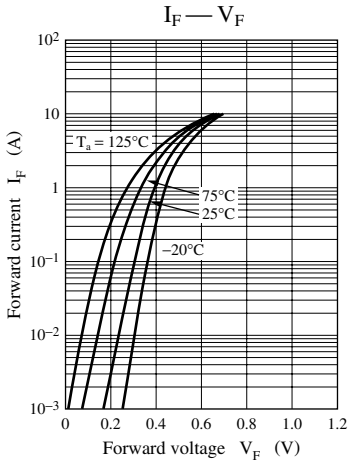
Internal Connection

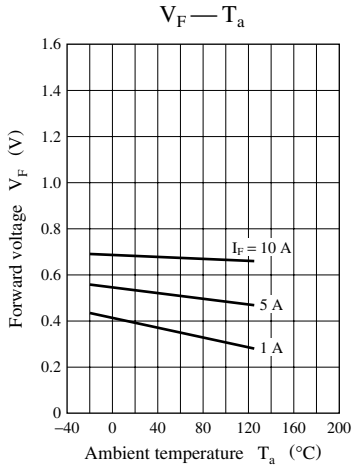


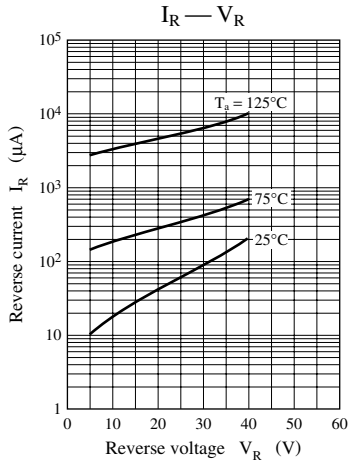
■ Electrical Characteristics $T_a = 25°C$

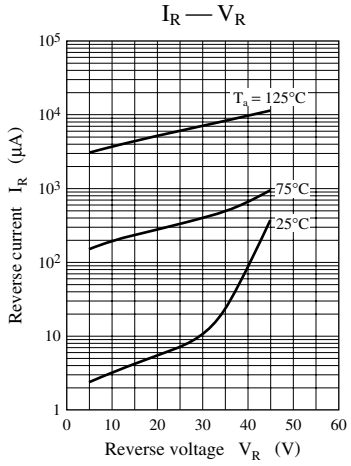
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Reverse current (DC)	MA3D750	I_R	V_R = 40 V, T_C = 25°C			3	mA
	MA3D750A		V_R = 45 V, T_C = 25°C			3	
Forward voltage (DC)		V_F	I_F = 5 A, T_C = 25°C			0.55	V
Thermal resistance		$R_{th(j-c)}$	Direct current (between junction and case)			3	°C/W

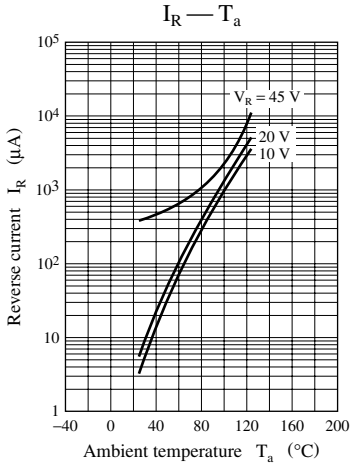
Note) Rated input/output frequency: 150 MHz

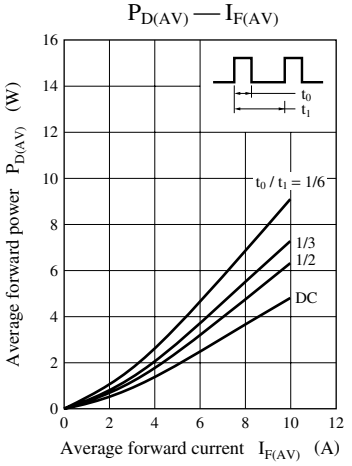

I_F — V_F
Forward current I_F (A)
Forward voltage V_F (V)
T_a = 125°C
75°C
25°C
−20°C

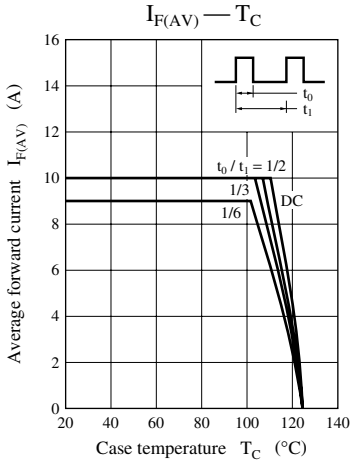

V_F — T_a
Forward voltage V_F (V)
Ambient temperature T_a (°C)
I_F = 10 A
5 A
1 A


I_R — V_R
Reverse current I_R (μA)
Reverse voltage V_R (V)
T_a = 125°C
75°C
25°C


I_R — V_R
Reverse current I_R (μA)
Reverse voltage V_R (V)
T_a = 125°C
75°C
25°C


I_R — T_a
Reverse current I_R (μA)
Ambient temperature T_a (°C)
V_R = 45 V
20 V
10 V


$P_{D(AV)}$ — $I_{F(AV)}$
Average forward power $P_{D(AV)}$ (W)
Average forward current $I_{F(AV)}$ (A)
t_0
t_1
t_0 / t_1 = 1/6
1/3
1/2
DC


$I_{F(AV)}$ — T_C
Average forward current $I_{F(AV)}$ (A)
Case temperature T_C (°C)
t_0
t_1
t_0 / t_1 = 1/2
1/3
1/6
DC