

ESTF80D22U

Ultra fast recovery

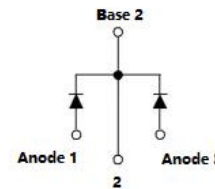
Features

- Ultra-fast recovery
- Very low I_{rrm}
- Very low Q_{rr}
- Specified at operating conditions
- Designed and qualified for industrial level



Benefits

- Reduced RFI and EMI
- Reduced power loss in diode and switching transistor
- Higher frequency operation
- Reduced snubbing



Applications

- Switching mode power supplies
- UPS
- DC/DC converters
- Free wheeling diodes
- Inverter
- Motor drives

Product Summary	
V_R	200V
V_F at 40A at 25 °C	1.05 V
$I_{F(AV)}$	2 x 40 A
t_{rr} (typical)	22 ns
T_J (maximum)	150 °C
Q_{rr} (typical)	50 nC
I_{RRM} (typical)	3.5 A

Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Values	UNIT
Cathode to anode voltage	V_R		200	V
Reverse DC Voltage	$V_{R(D)}$		200	
Average Forward Current	$I_{F(AV)}$ Resistive Load	$T_C=25^\circ C$	160	A
		$T_C=115^\circ C$	80	
Maximum continuous forward current	I_F	per leg	40	
		per device	60	
Single pulse forward current (Peak forward current per leg)	I_{FSM}		150	
Maximum repetitive forward current (per leg)	I_{FRM}		60	
Operating junction and storage temperature range	T_J, T_{Stg}		- 55 to + 150	

Electrical Specifications (T_J = 25 °C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	UNIT
Cathode to anode breakdown voltage	V _{BR}	I _R = 100 μA	260	-	-	V
Maximum forward voltage	V _{FM}	I _F = 20 A	-	0.87	0.95	
		I _F = 40 A	-	1.05	1.15	
		I _F = 40 A, T _J = 125 °C	-	0.95	-	
Maximum reverse leakage current	I _{RM}	V _R = V _R rated	-	-	15	μA
		T _J = 125°C, V _R = V _R rated	-	-	250	

Dynamic recovery characteristics(T_J=25 °C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Reverse recovery time	t _{rr}	I _F = 0.5A, I _R = 1.0A, I _{RR} = 250mA (RG#1 CKT)	-	22	30	ns	
		I _F = 1.0 A, di _F /dt = 50 A/μs, V _R = 30 V, T _J = 25°C	-	-	30		
	t _{rr1}	T _J = 25 °C	I _F =20A	-	22		-
	t _{rr2}	T _J = 125 °C		-	36		-
	Q _{rr}	T _J = 125 °C		-	60		-

Fig.1 Maximum forward voltage drop characteristics

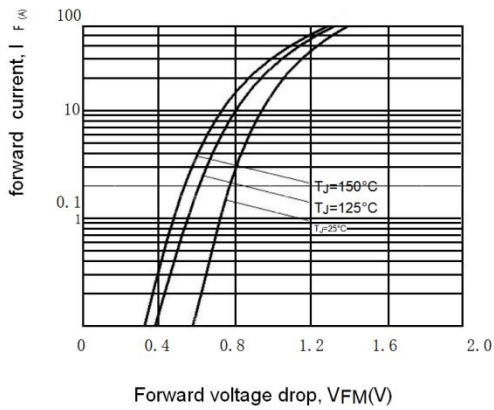


Fig.2 Typical values of reverse current vs. reverse voltage

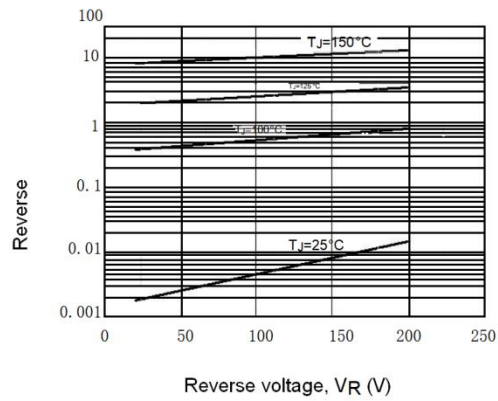


Fig.3 Maximum allowable case temperature vs. average forward current

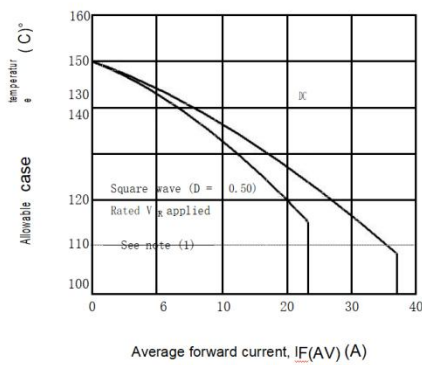
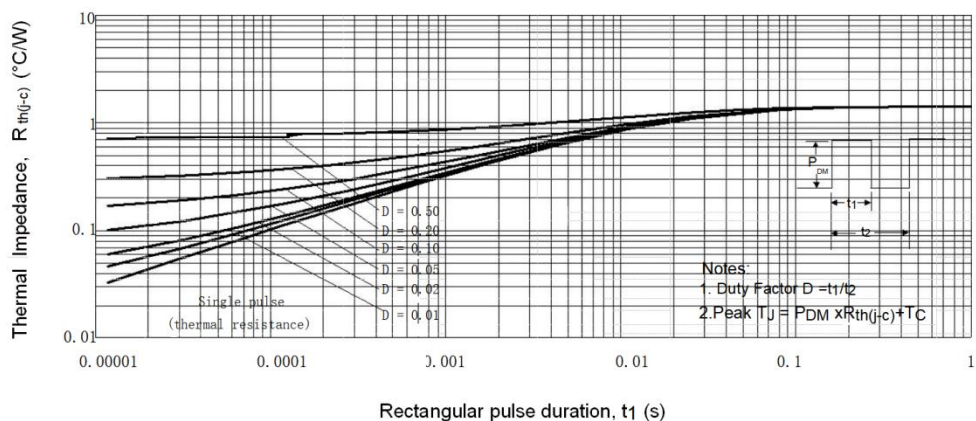


Fig.4 Maximum thermal impedance $R_{th(j-c)}$ characteristics



Package outline dimension

