

XBSC42A086

ETR16044-001

SiC Schottky Barrier Diodes (650V, 8A)

FEATURES

- Fast switching operation
- Low recovery loss
- Environmentally Friendly : EU RoHS Compliant, Pb Free

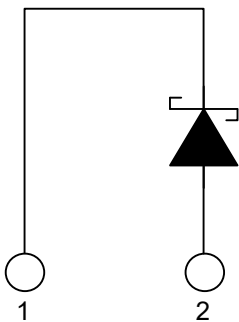
V_{RM}	650V
I_F	8A
V_F	1.35V

APPLICATIONS

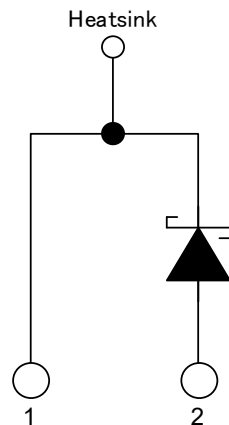
- Power Factor Correction
- Solar Inverters
- Uninterruptible Power Supplies

EQUIVALENT CIRCUIT

TO-220FM-2

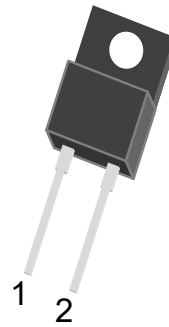


TO-220AC

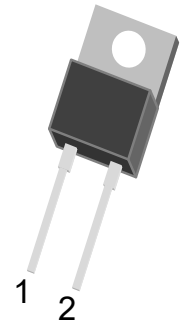


PIN CONFIGURATION

TO-220FM-2



TO-220AC



1 : Cathode
2 : Anode

PRODUCT NAME

PRODUCT NAME	PACKAGE	ORDER UNIT
XBSC42A086CS-G	TO-220AC	1,000 pcs/ 20 Tubes
XBSC42A086FS-G	TO-220FM-2	1,000 pcs/ 20 Tubes

ABSOLUTE MAXIMUM RATINGS

Tc=25°C unless otherwise specified

PARAMETER		SYMBOL	RATINGS	UNITS
Repetitive Peak Reverse Voltage		V_{RM}	650	V
Reverse Voltage		V_R	650	V
Forward Current (Tc=100°C)		I_F	8	A
Non-Continuous Forward Surge Current	PW ^(*) =10ms, Sinusoidal, Tc=25°C	I_{FSM}	75	A
	PW ^(*) =10ms, Sinusoidal, Tc=150°C		62	A
i ² t value	PW ^(*) =10ms, Tc=25°C	$\int i^2 dt$	28	A ² s
	PW ^(*) =10ms, Tc=150°C		19	A ² s
Total Power Dissipation	TO-220AC	P_d	56	W
	TO-220FM-2	P_d	30	W
Junction Temperature		T_J	175	°C
Storage Temperature		T_{stg}	-55 ~ 175	°C

(*) Pulse Width

■ THERMAL CHARACTERISTICS

PARAMETER		SYMBOL	TYP.	MAX.	UNIT
Thermal Resistance, junction-case	TO-220AC	R_{thJC}	1.9	2.7	°C/W
	TO-220FM-2		4.3	5.0	°C/W

■ ELECTRICAL CHARACTERISTICS

T_j=25°C

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
DC Blocking Voltage	V _{DC}	I _R =40μA	650	-	-	V
Forward Voltage	V _F	I _F =8A, T _j =25°C	-	1.35	1.65	V
		I _F =8A, T _j =150°C	-	1.7	-	V
Reverse Current	I _R	V _R =650V, T _j =25°C	-	0.7	64	μA
		V _R =650V, T _j =150°C	-	15	-	μA
Total Capacitance	C	V _R =1V, f=1MHz	-	320	-	pF
		V _R =400V, f=1MHz	-	38	-	pF
Total Capacitive Charge	Q _c	V _R =400V	-	15	-	nC

■ NOTES ON USE

1. Please use this IC within the absolute maximum ratings.

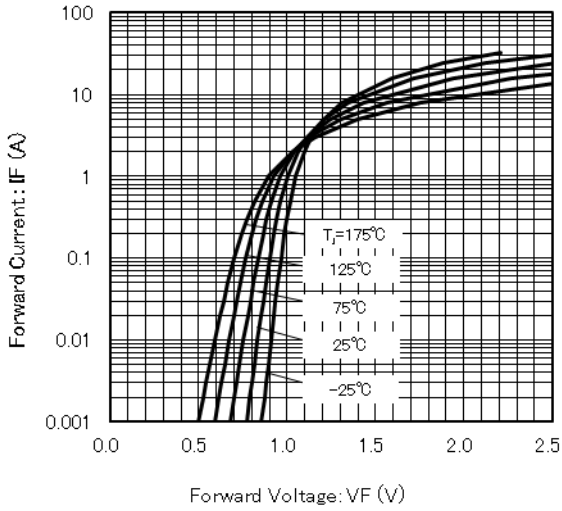
Even within the ratings, in case of high load use continuously such as high temperature, high voltage, high current and thermal stress may cause reliability degradation of the IC.

2. Torex places an importance on improving our products and their reliability.

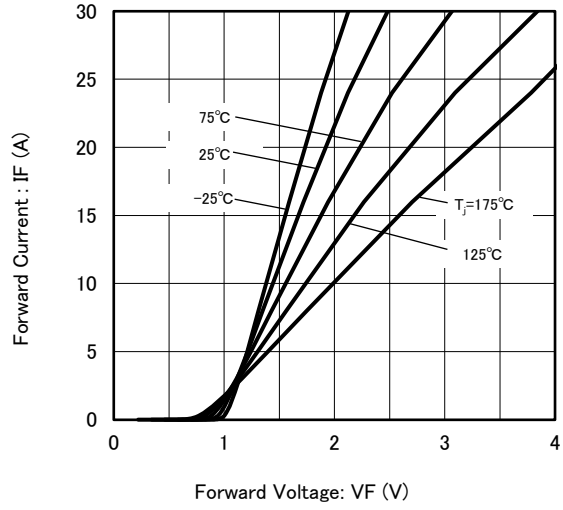
We request that users incorporate fail-safe designs and post-aging protection treatment when using Torex products in their systems.

TYPICAL PERFORMANCE CHARACTERISTICS

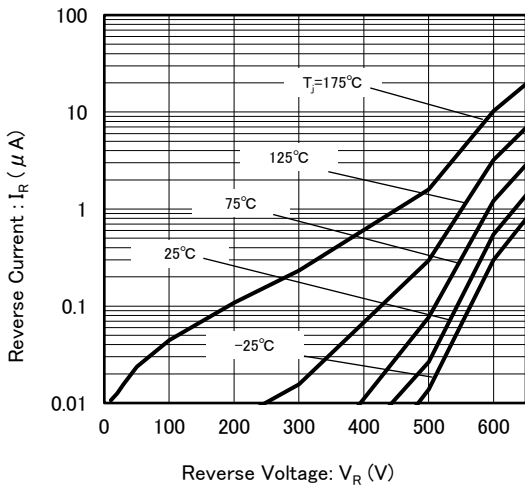
(1) Forward Current vs. Forward Voltage



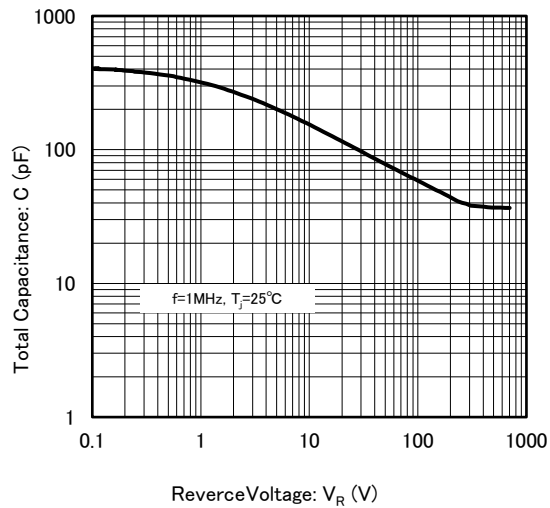
(2) Forward Current vs. Forward Voltage



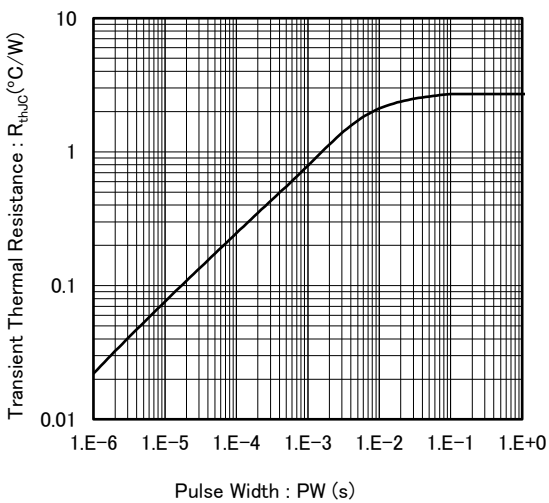
(3) Reverse Current vs. Reverse Voltage



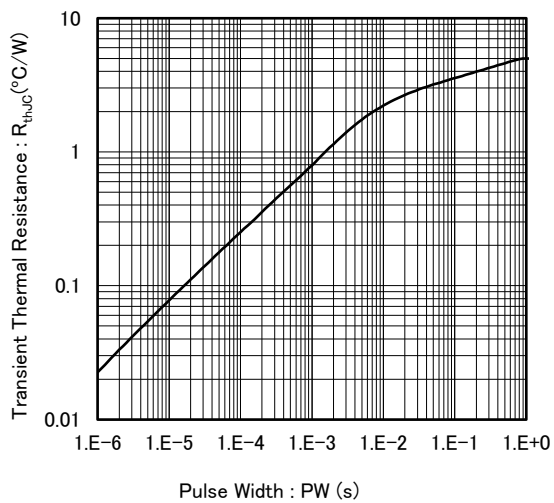
(4) Terminal Capacitance vs. Reverse Voltage



(5) Transient Thermal Resistance TO-220AC

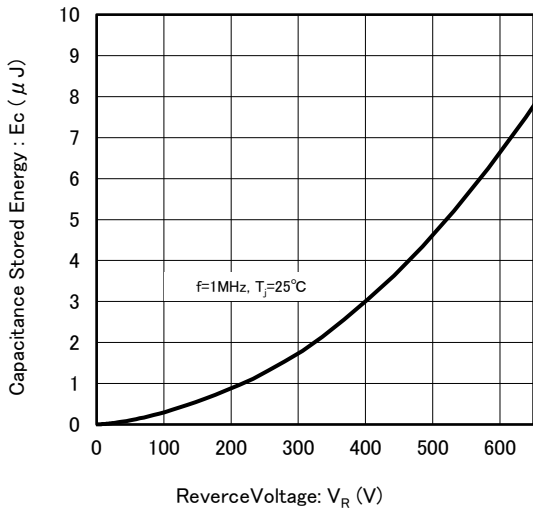


(6) Transient Thermal Resistance TO-220FM-2

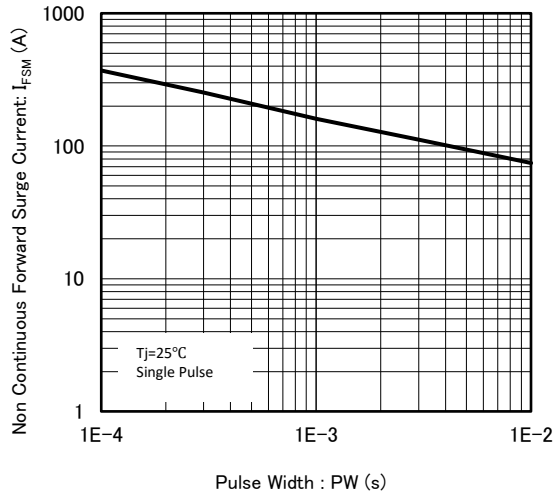


TYPICAL PERFORMANCE CHARACTERISTICS

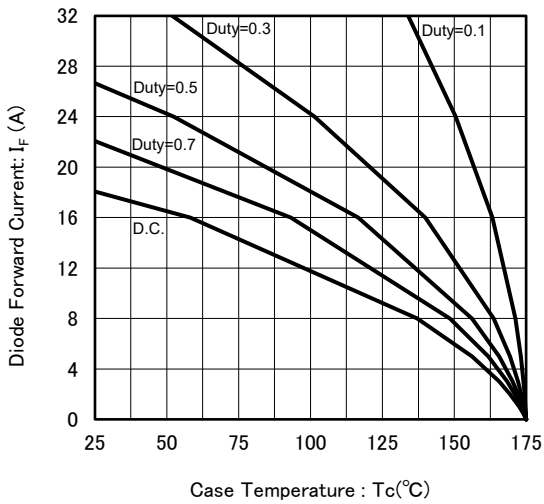
(7) Capacitance Stored Energy



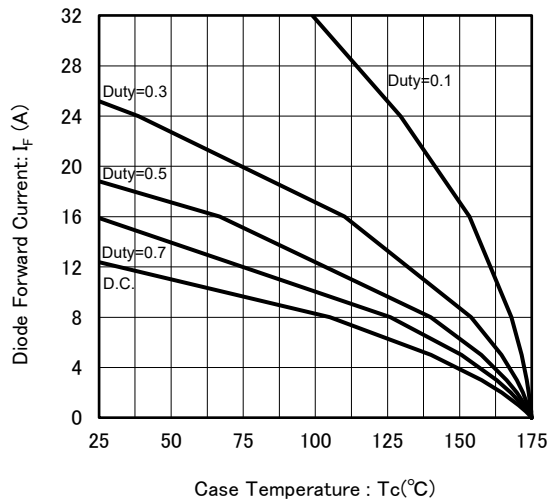
(8) Non-Continuous Forward Surge Current



(9) MAX Forward Current vs. Case Temperature TO-220AC



(10) MAX Forward Current vs. Case Temperature TO-220FM-2



■ PACKAGING INFORMATION

For the latest package information go to, www.torexsemi.com/technical-support/packages

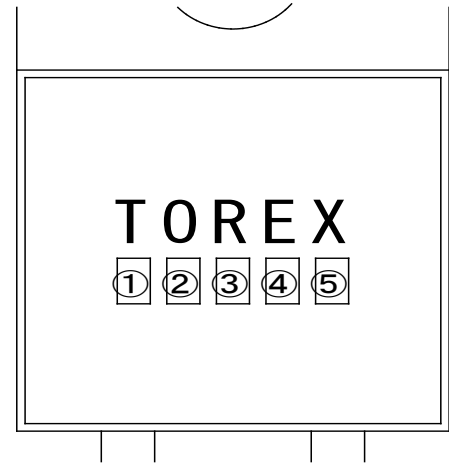
PACKAGE	OUTLINE / LAND PATTERN	THERMAL CHARACTERISTICS
TO-220AC	TO-220AC PKG	-
TO-220FM-2	TO-220FM-2 PKG	-

MARKING RULE

Mark①,②,③ Indicates product classification.

Symbol			Product Name
①	②	③	
C	3	1	XBSC42A086

TO-220AC/TO-220FM-2



Mark④,⑤ Represents the manufacturing lot. Repeats the sequence 01~09, 0A~0Z, 11~9Z, A1~A9, AA~AZ, B1~ZZ. (However, excluding G, I, J, O, Q, and W. Do not use inverted characters.)

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