

$V_{RM} = 600\text{ V}$, $I_{F(AV)} = 30\text{ A}$, $t_{rr} = 35\text{ ns}$
Fast Recovery Diode
CTXS-5306S

Description

The CTXS-5306S is a fast recovery diode of 600 V / 30 A. The maximum t_{rr} of 35 ns is realized by optimizing a life-time control. The low thermal resistance package achieves high performance in terms of heat dissipation.

Features

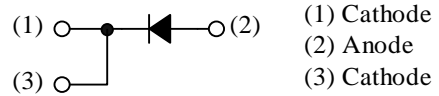
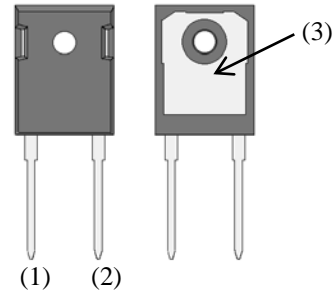
- RoHS Compliant
- V_{RM} ----- 600 V
- $I_{F(AV)}$ ----- 30 A
- V_F ----- 1.7 V
- t_{rr} ----- 35 ns

Applications

- White Goods
- Audiovisual Equipment
- Lighting Equipment
- Industrial Electronic Equipment
(Communication Equipment and Factory Automation)
- For CCM PFC Circuit

Package

TO247-2L



(1) Cathode
(2) Anode
(3) Cathode

Not to scale

CTXS-5306S

Absolute Maximum Ratings

Unless otherwise specified, $T_A = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Rating	Unit	Conditions
Peak Repetitive Reverse Voltage	V_{RSM}	600	V	
Repetitive Reverse Voltage	V_{RM}	600	V	
Average Forward Current	$I_{F(AV)}$	30	A	See Figure 1 and Figure 2
Surge Forward Current	I_{FSM}	160	A	Half cycle sine-wave, positive side, 10 ms, one shot.
I^2t Limiting Value	I^2t	128	A^2s	$1\text{ ms} \leq t \leq 10\text{ ms}$
Junction Temperature	T_J	-40 to 150	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-40 to 150	$^\circ\text{C}$	

Electrical Characteristics

Unless otherwise specified, $T_A = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage Drop	V_F	$T_J = 25\text{ }^\circ\text{C}, I_F = 30\text{ A}$	—	—	1.7	V
		$T_J = 100\text{ }^\circ\text{C}, I_F = 30\text{ A}$	—	1.35	—	V
Reverse Leakage Current	I_R	$V_R = V_{RM}$	—	—	100	μA
Reverse Leakage Current Under High Temperature	$H \cdot I_R$	$V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$	—	—	30	mA
Reverse Recovery Time	t_{rr}	$I_F = I_{RP} = 500\text{ mA}$ 90% recovery point, $T_J = 25\text{ }^\circ\text{C}$	—	—	35	ns
Thermal Resistance ⁽¹⁾	$R_{th(J-L)}$		—	—	1.5	$^\circ\text{C/W}$

⁽¹⁾ $R_{th(J-L)}$ is thermal resistance between junction and lead.

Rating and Characteristic Curves

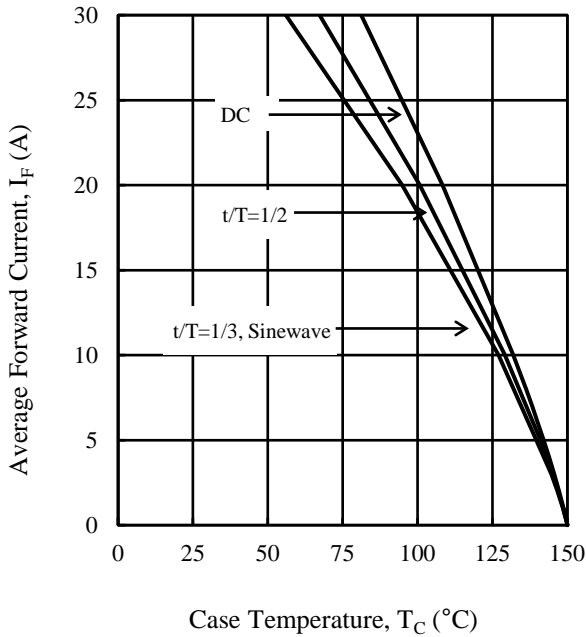


Figure 1. T_C vs. I_F Typical Characteristics ($V_R = 0$ V)

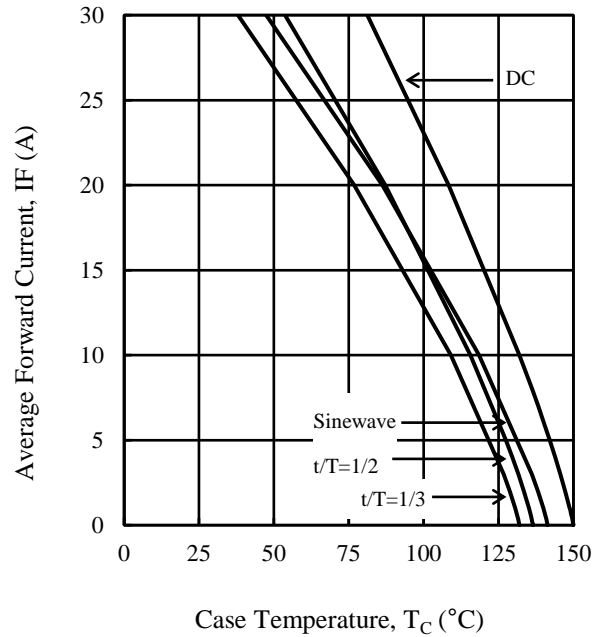


Figure 2. T_C vs. I_F Typical Characteristics ($V_R = 600$ V)

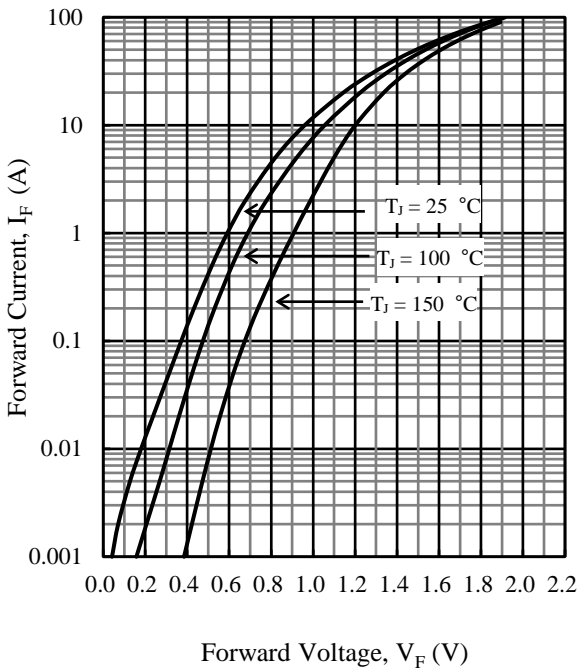


Figure 3. V_F vs. I_F Typical Characteristics

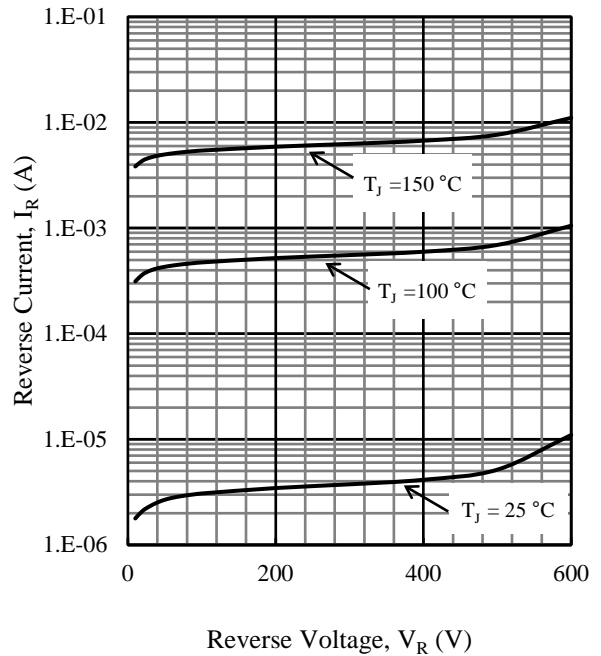
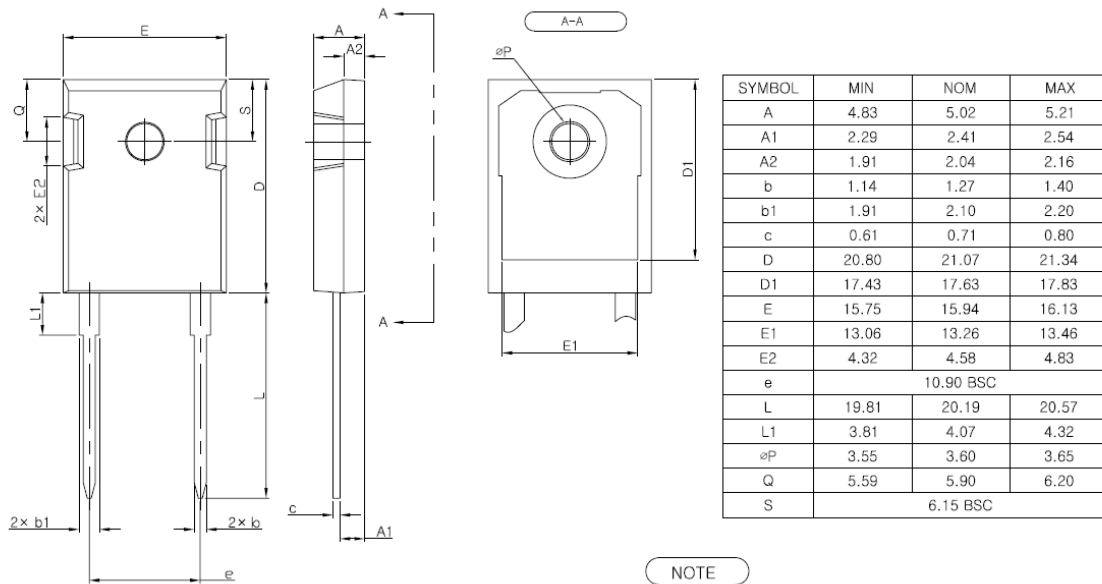


Figure 4. V_R vs. I_R Typical Characteristics

CTXS-5306S

Physical Dimensions

• TO247-2L



NOTE

1. THESE DIMENSION DO NOT INCLUDE MOLD PROTRUSION

NOTES:

- Dimensions in millimeters
- Bare lead frame: Pb-free (RoHS compliant)
- When soldering the products, make sure to minimize the working time, within the following limits:
 - Flow: $260 \pm 5 \text{ }^\circ\text{C} / 10 \pm 1 \text{ s}$, 2 times
 - Soldering Iron: $380 \pm 10 \text{ }^\circ\text{C} / 3.5 \pm 0.5 \text{ s}$, 1 time (Soldering should be at a distance of at least 1.5 mm from the body of the products.)
- The recommended screw torque for TO-247: 0.686 to 0.882 N·m (7 to 9 kgf·cm)

Marking Diagram

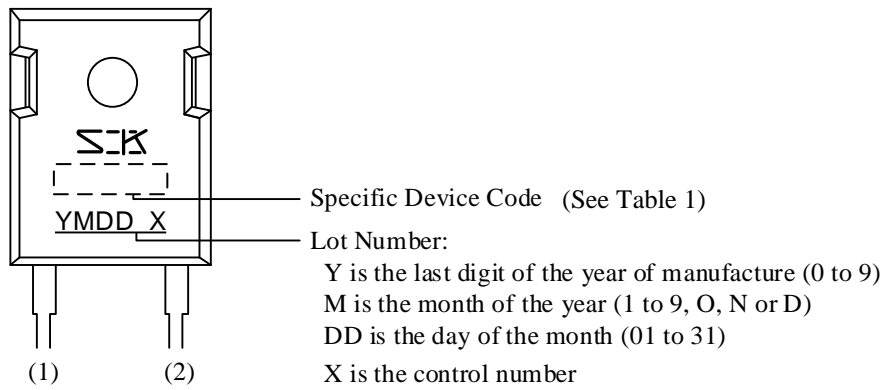


Table 1. Specific Device Code

Specific Device Code	Part Number
XS5306	CTXS-5306S

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