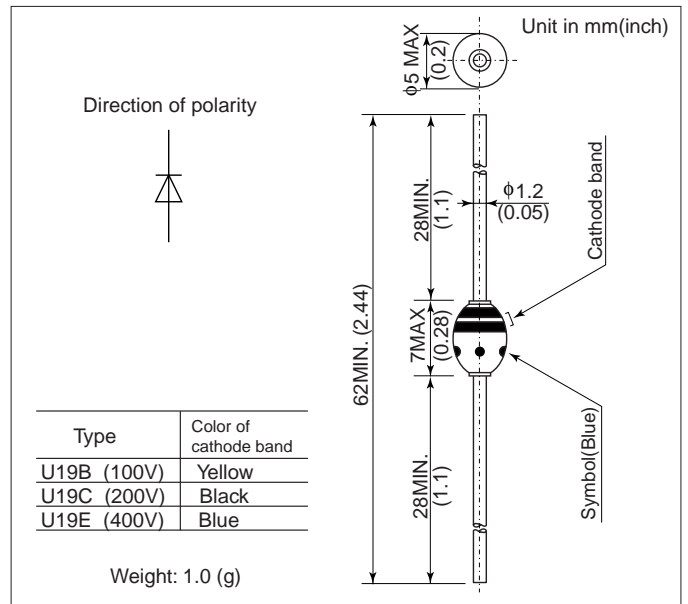


U19

FEATURES

- For high speed switching.
- Diffused-junction. Glass passivated and encapsulated.

OUTLINE DRAWING



ABSOLUTE MAXIMUM RATINGS

Items	Type		U19B	U19C	U19E
Repetitive Peak Reverse Voltage	V_{RRM}	V	100	200	400
Non-Repetitive Peak Reverse Voltage	V_{RSM}	V	200	300	500
Average Forward Current	$I_{F(AV)}$	A	2.5 (Single-phase half sine wave 180° conduction) TL = 80°C, Lead length = 10mm		
Surge(Non-Repetitive) Forward Current	I_{FSM}	A	80 (Without PIV, 10ms conduction, T _j = 150°C start)		
I ² t Limit Value	I ² t	A ² s	25.6 (Time = 2 ~ 10ms, I = RMS value)		
Operating Junction Temperature	T _j	°C	-65 ~ +150		
Storage Temperature	T _{stg}	°C	-65 ~ +150		

Notes (1) Lead mounting : Lead temperature 300°C max. to 3.2mm from body for 5sec. max..

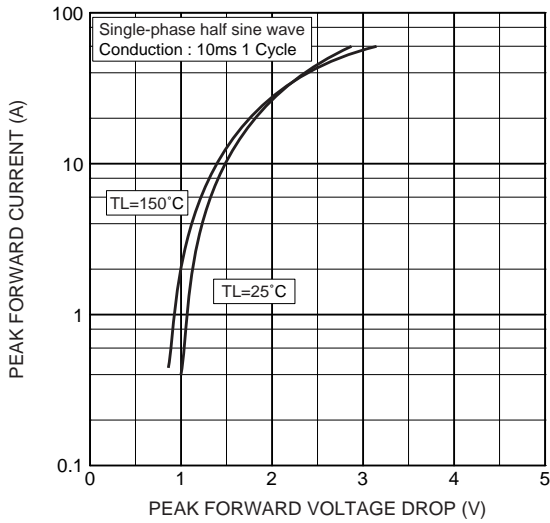
(2) Mechanical strength : Bending 90°×2 cycles or 180°×1 cycle, Tensile 3kg, Twist 90°×1 cycle.

CHARACTERISTICS(T_L=25°C)

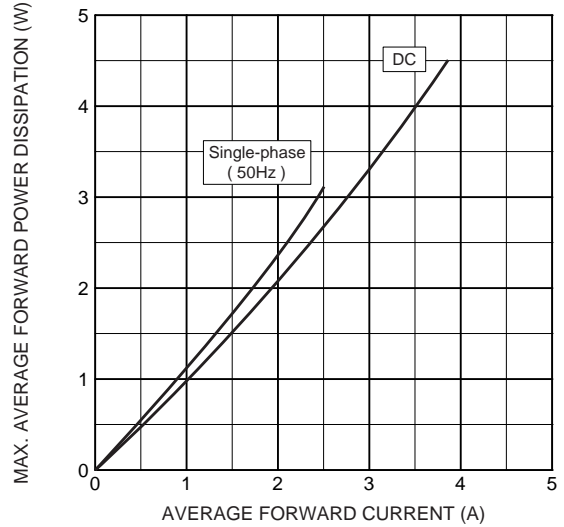
Items	Symbols	Units	Min.	Typ.	Max.	Test Conditions
Peak Reverse Current	I _{RRM}	μA	—	2.0	10	All class, Rated V _{RRM}
Peak Forward Voltage	V _{FM}	V	—	—	1.3	I _{FM} =2.5 A _p , Single-phase half sine wave 1 cycle
Reverse Recovery Time	t _{rr}	μs	—	—	0.2	I _F =2mA, V _R =-15V
Steady State Thermal Impedance	R _{th(j-a)}	°C/W	—	—	50	Lead length = 10 mm
	R _{th(j-l)}				20	

U19

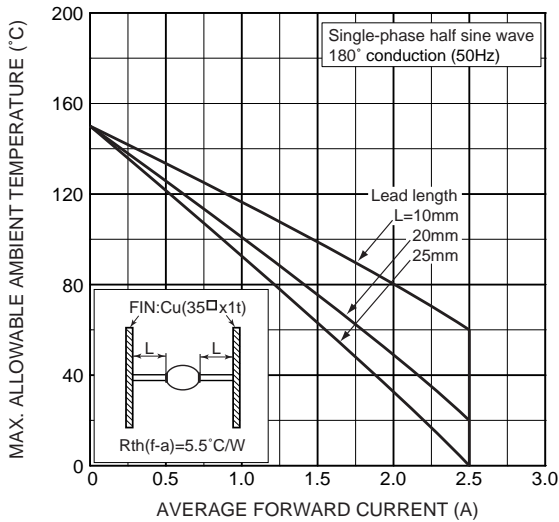
Forward characteristics



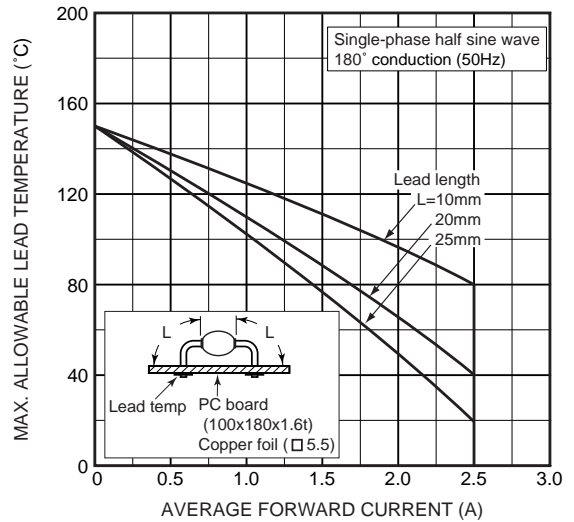
Max. average forward power dissipation (Resistive or inductive load)



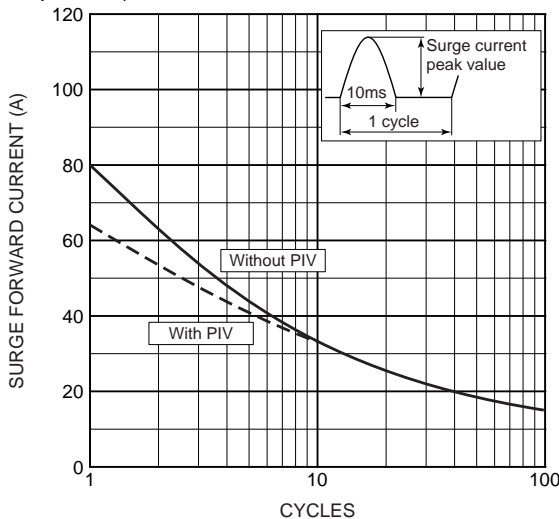
Max. allowable ambient temperature (Resistive or inductive load)



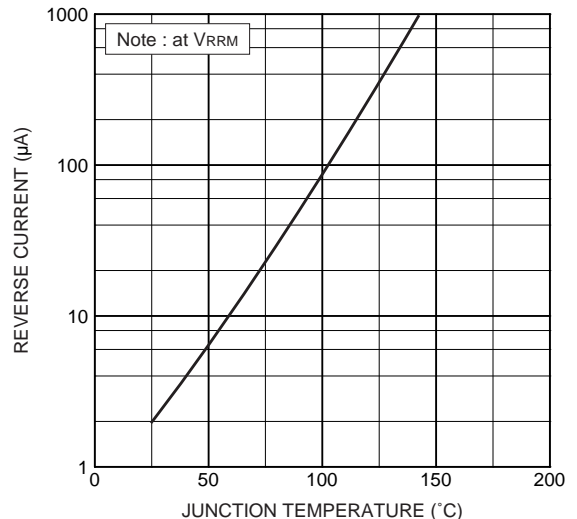
Max. allowable lead temperature (Resistive or inductive load)



Surge forward current characteristics (Non-repetitive)

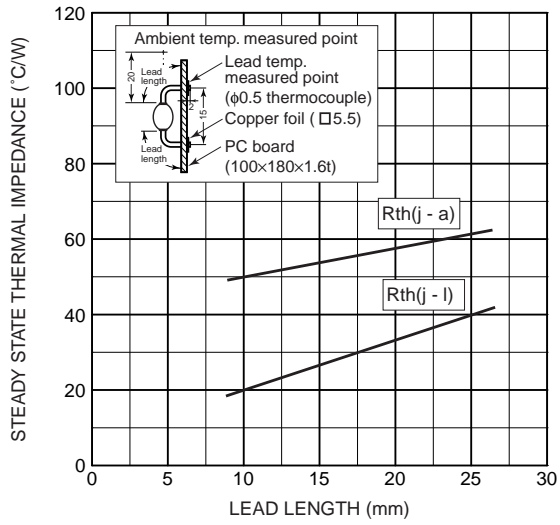


Typ. reverse current vs. junction temperature

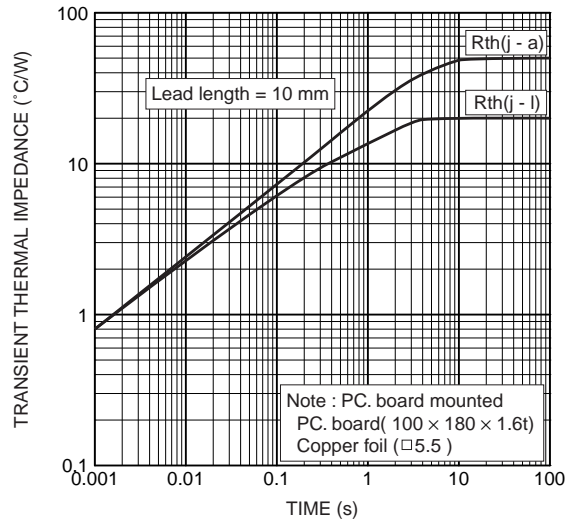


U19

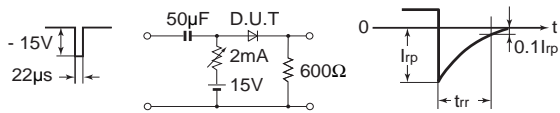
Steady state thermal impedance



Transient thermal impedance



Reverse recovery time(t_{rr}) test circuit



Precautions for Safe Use and Notices

If semiconductor devices are handled in inappropriate manner, failures may result.
For this reason, be sure to read "Precaution for Use" before use.



This mark indicates an item about which caution is required.



CAUTION

This mark indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and damage to property.



CAUTION

- (1) Regardless of changes in external conditions during use "absolute maximum ratings" should never be exceed in designing electronic circuits that employ semiconductors. In the case of pulse use, furthermore, "safe operating area(SOA)" precautions should be observed.
- (2) Semiconductor devices may experience failures due to accident or unexpected surge voltages. Accordingly, adopt safe design features, such as redundancy or prevention of erroneous action, to avoid extensive damage in the event of a failure.
- (3) In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, life-support-related medical equipment, fuel control equipment and various kinds of safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of user's fail-safe precautions or other arrangement. Or consult Hitachi's sales department staff.

(If a semiconductor device fails, there may be cases in which the semiconductor device, wiring or wiring pattern will emit smoke or cause a fire or in which the semiconductor device will burst)

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