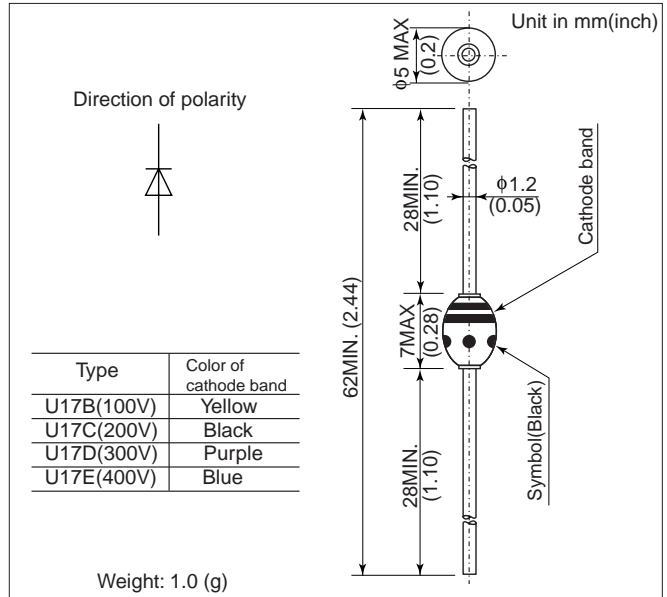


U17

FEATURES

- Transient surge voltage protection.
- Diffused-junction. Glass passivated and encapsulated.

OUTLINE DRAWING



ABSOLUTE MAXIMUM RATINGS

Items	Type	U17B	U17C	U17D	U17E	
Repetitive Peak Reverse Voltage	V_{RRM}	V	100	200	300	400
Peak Reverse Power	P_{RM}	kW	3($T_j = 25^\circ\text{C}$, Impulse duration 10 μs Non-repetitive)			
Average Forward Current	$I_{F(AV)}$	A	2.5(Single-phase half sine wave 180° conduction $T_L=90^\circ\text{C}$, Lead length = 10mm)			
Surge(Non-Repetitive) Forward Current	I_{FSM}	A	100(Without PIV, 10ms conduction, $T_j = 175^\circ\text{C}$ start)			
I^2t Limit Value	I^2t	A^2s	40(Time = 2 ~ 10ms, I = RMS value)			
Operating Junction Temperature	T_j	$^\circ\text{C}$	-40 ~ +175			
Storage Temperature	T_{stg}	$^\circ\text{C}$	-40 ~ +175			

- Notes (1) Lead mounting : Lead temperature 300 $^\circ\text{C}$ max. to 3.2mm from body for 5sec. max..
 (2) Mechanical strength : Bending 90 $^\circ$ ×2 cycles or 180 $^\circ$ ×1 cycle, Tensile 3kg, Twist 90 $^\circ$ ×1 cycle.

CHARACTERISTICS($T_L=25^\circ\text{C}$)

Items	Symbols	Units	Min.	Typ.	Max.	Test Conditions
Peak Reverse Current	I_{RRM}	μA	-	4	50	B class
				1.5	20	C,D class
				0.6	10	E class
Peak Forward Voltage	V_{FM}	V	-	-	1.1	$I_{FM}=2.5\text{Ap}$, Single-phase half sine wave 1 cycle
Reverse Recovery Time	t_{rr}	μs	-	3.0	-	$I_F=2\text{mA}$, $V_R=-15\text{V}$
Avalanche Voltage	V_{AVL}	V	Table.1 and 2		-	$I_{RM}=1.0\text{mA}$, Single-phase half sine wave 1 pps, Time $\leq 5\text{s}$
Avalanche Voltage Temperature Coefficient	α	$\%/\text{^\circ C}$	-	0.080	-	$\frac{\Delta V_{AVL}}{V_{AVL}} \times \frac{1}{175-25} \times 100$
Steady State Thermal Impedance	$R_{th(j-a)}$	$^\circ\text{C/W}$	-	-	60	Lead length = 10 mm
	$R_{th(j-l)}$				30	

U17

TABLE.1 Standard voltage

V _{RRM} Class	B		C		D		E		Units
V _{AVL} Band	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
	230	415	280	505	375	725	465	805	V

“example order type” U17C

V_{RRM} : 200V / I_{F(AV)} : 2.5A / V_{AVL} : 280~505V

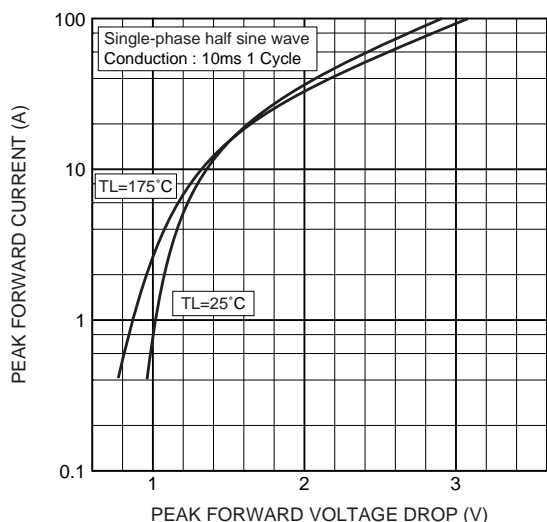
TABLE.2 Optional voltage : for Large order products

V _{RRM} Class	B				C				D				E			Units	
V _{AVL} Symbols	27	30	33	36	33	36	39	44	44	50	55	63	55	63	70		
TYP. V _{AVL}	270	300	330	360	330	360	390	440	440	500	550	630	550	630	700		
V _{AVL} Band	A	MIN	230	255	280	305	280	305	330	375	425	465	535	465	535	595	
		MAX	310	345	380	415	380	415	450	505	575	635	725	635	725	805	
	B	MIN	250	280	305	330	305	330	360	405	405	460	505	580	505	580	645
		MAX	290	320	355	390	355	390	420	475	475	535	590	680	590	680	750

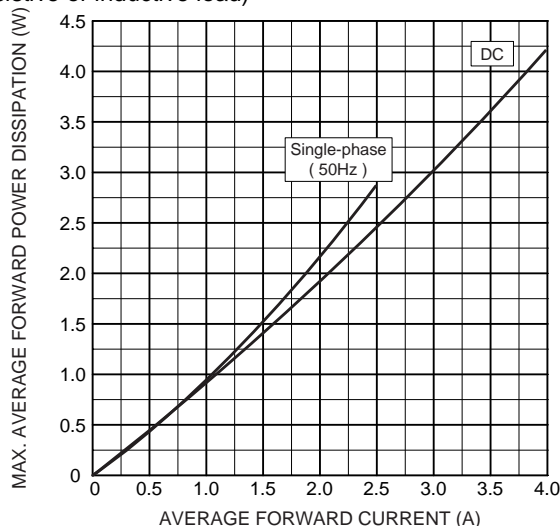
“example order type” U17C36A

V_{RRM} : 200V / I_{F(AV)} : 2.5A / V_{AVL} : 305~415V

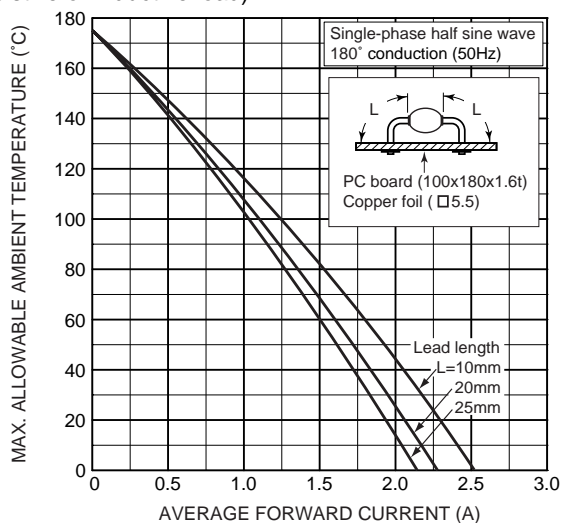
Forward characteristics



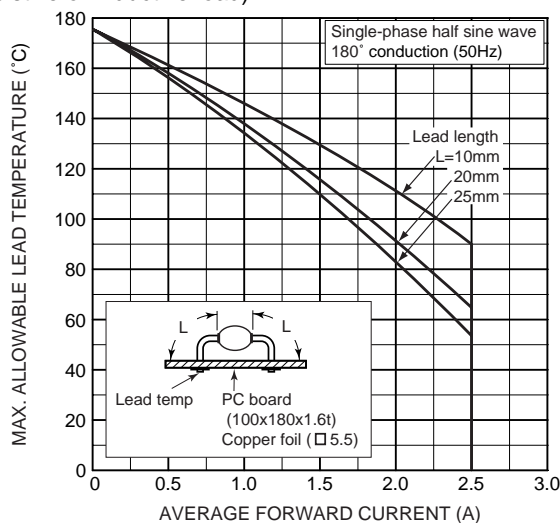
Max. average forward power dissipation (Resistive or inductive load)



Max. allowable ambient temperature (Resistive or inductive load)

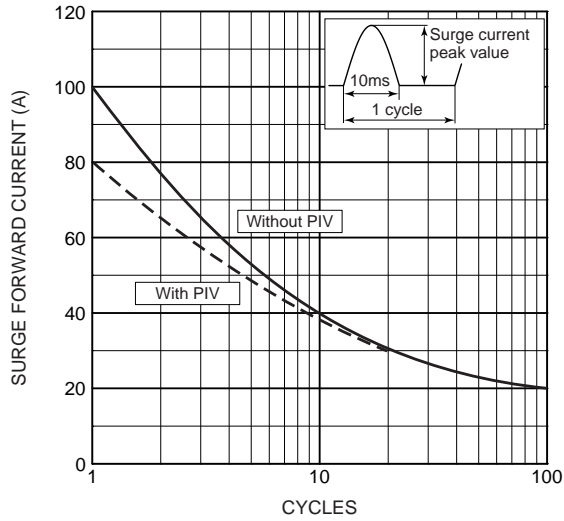


Max. allowable lead temperature (Resistive or inductive load)

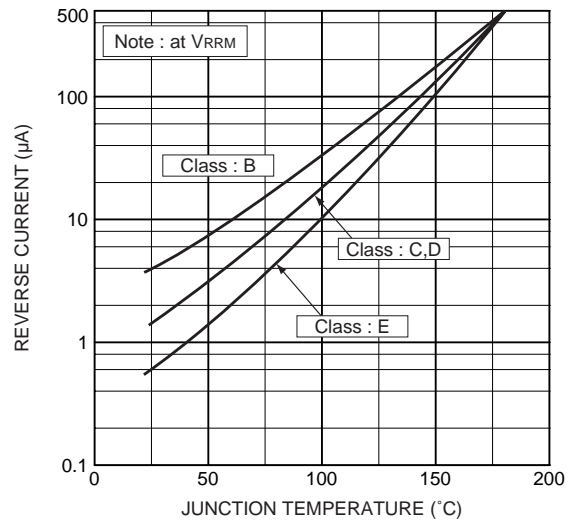


U17

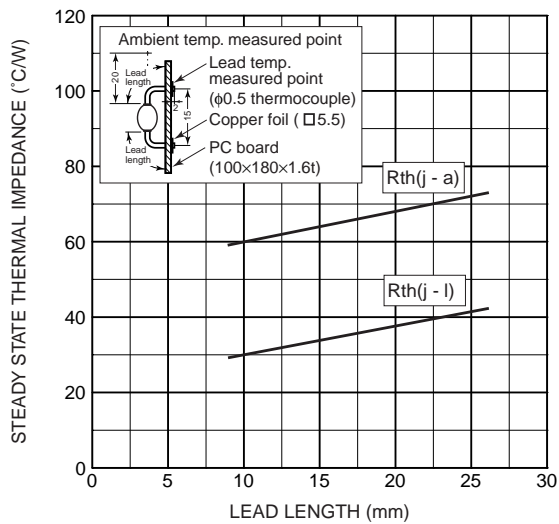
Surge forward current characteristics
(Non-repetitive)



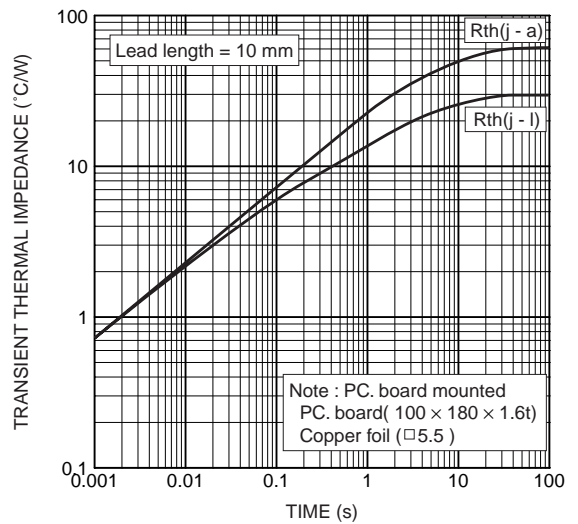
Typ. Reverse current vs. junction temperature



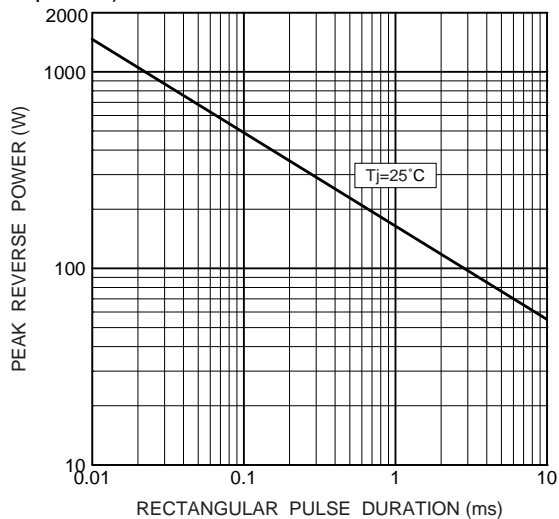
Steady-state thermal impedance



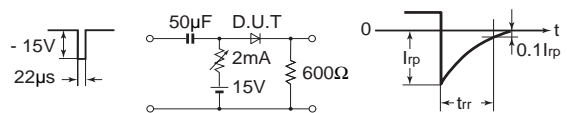
Transient thermal impedance



Typical reverse power characteristics
(Non-repetitive)



Reverse recovery time (trr) test circuit



HITACHI POWER SEMICONDUCTORS

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