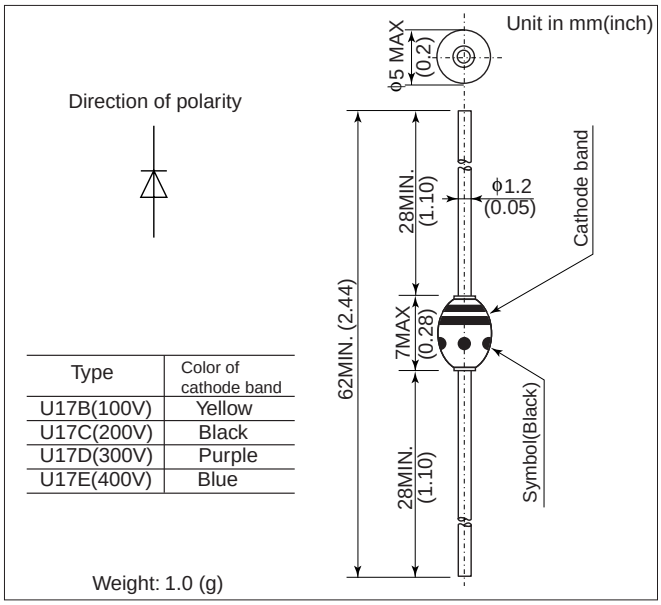
U17

FEATURES

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

OUTLINE DRAWING



Type	Color of cathode band
U17B(100V)	Yellow
U17C(200V)	Black
U17D(300V)	Purple
U17E(400V)	Blue

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(Tj = 25°C,Impulse duration 10μs Non-repetitive)			
Average Forward Current	$I_{F(AV)}$	A	2.5(Single-phase half sine wave 180° conduction, T_L=90°C, Lead length = 10mm)			
Surge(Non-Repetitive) Forward Current	I_{FSM}	A	100(Without PIV, 10ms conduction, Tj = 175°C start)			
I^2t Limit Value	I^2t	A^2s	40(Time = 2 ~ 10ms, I = RMS value)			
Operating Junction Temperature	T_j	°C	-40 ~ +175			
Storage Temperature	T_{stg}	°C	-40 ~ +175			

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	—	4	50	B class	Rated V_{RRM}
				1.5	20	C,D class	
				0.6	10	E class	
Peak Forward Voltage	V_{FM}	V	—	—	1.1	I_{FM}=2.5Ap, Single-phase half sine wave 1 cycle	
Reverse Recovery Time	trr	μs	—	3.0	—	I_F=2mA, V_R=-15V	
Avalanche Voltage	V_{AVL}	V	Table.1			I_{RM}=1.0mA, Single-phase half sine wave 1 pps, Time ≤ 5s	
Avalanche Voltage Temperature Coefficient	α	%/°C	—	0.080	—	$\frac{\Delta VAVL}{VAVL} \times \frac{1}{175\text{-}25} \times 100$	
Steady State Thermal Impedance	$R_{th(j\text{-}a)}$	°C/W	—	—	60	Lead length = 10 mm	
	$R_{th(j\text{-}l)}$				30		

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TABLE.1

			U17														
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
V_{AVL} Band	A	MIN	230	255	280	305	280	305	330	375	375	425	465	535	465	535	595	V
	±15%	MAX	310	345	380	415	380	415	450	505	505	575	635	725	635	725	805	
	B	MIN	250	280	305	330	305	330	360	405	405	460	505	580	505	580	645	
	±7.5%	MAX	290	320	355	390	355	390	420	475	475	535	590	680	590	680	750	

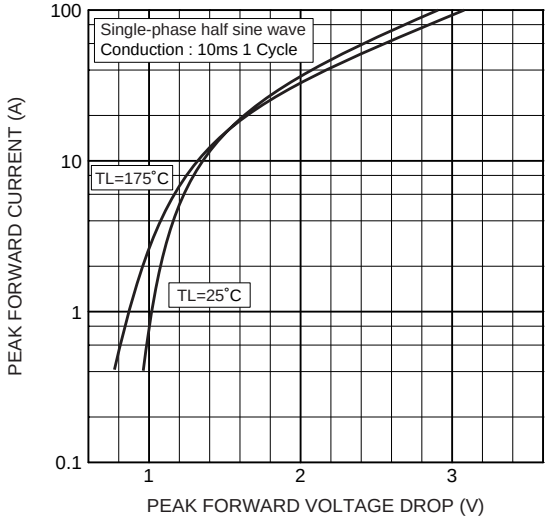
As required, the avalanche voltage can be selected as follows :

"example" U17C36A V_{RRM} 200V

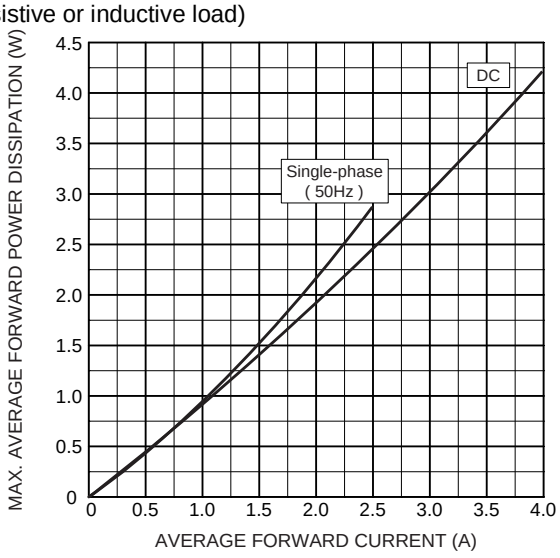
$IF_{(AV)}$ 2.5A

V_{AVL} 305~415V

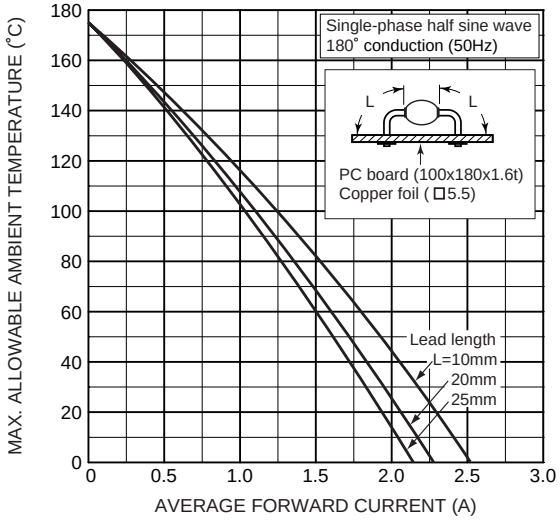
Forward characteristics



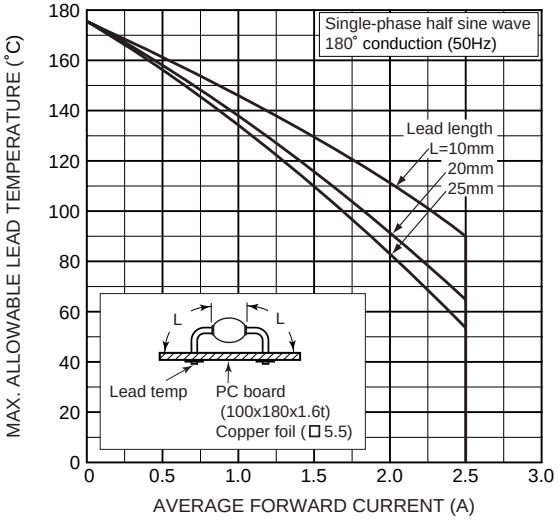
Max. average forward power dissipation
(Resistive or inductive load)



Max. allowable ambient temperature
(Resistive or inductive load)



Max. allowable lead temperature
(Resistive or inductive load)



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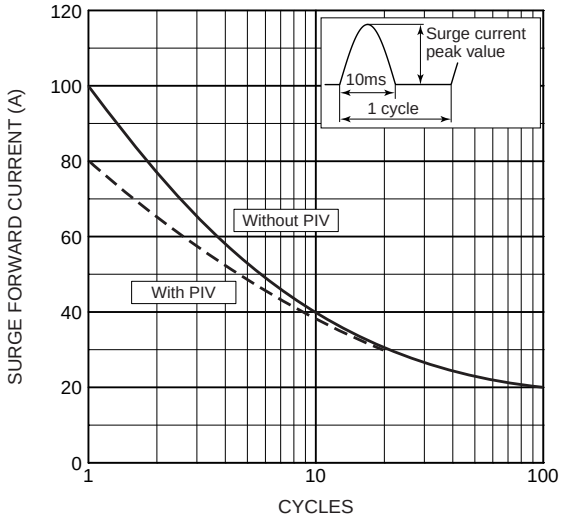
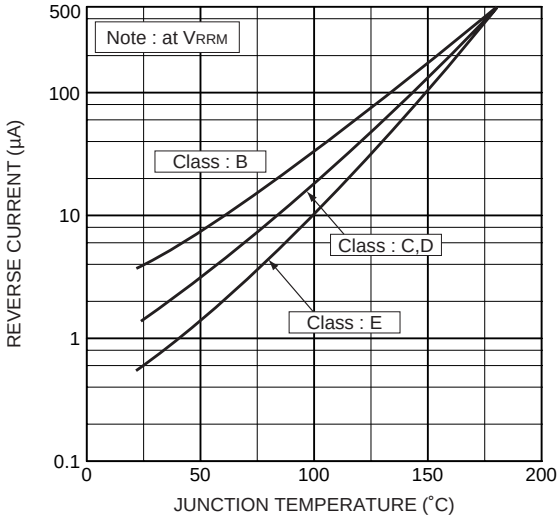
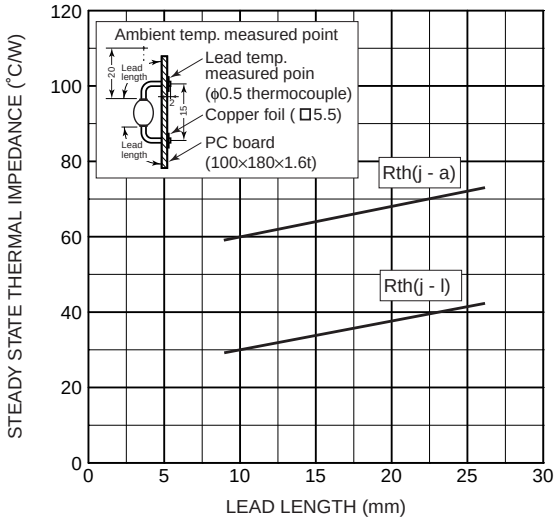
Surge forward current characteristic
(Non-repetitive)



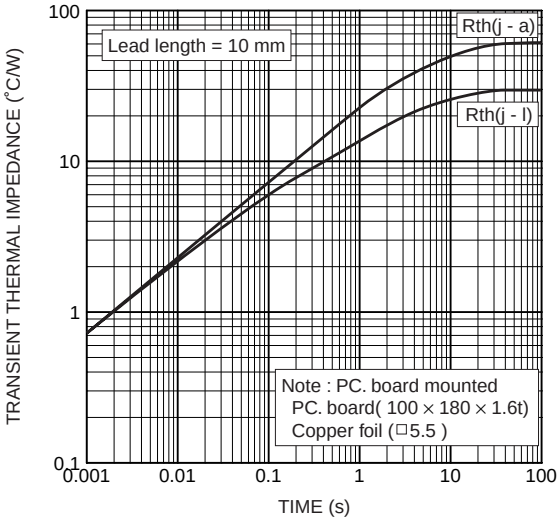
Typ. Reverse current vs. junction temperature



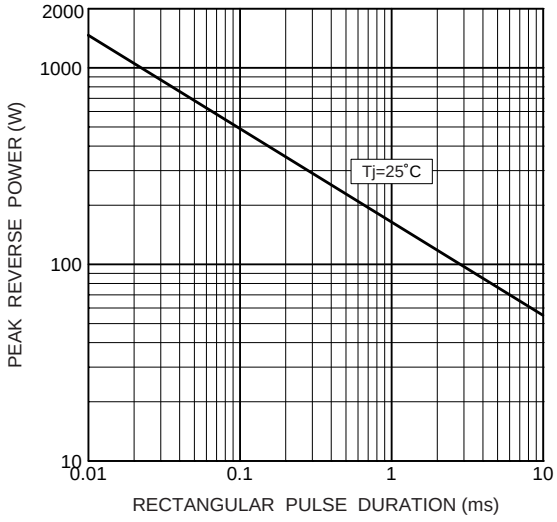
Steady-state thermal impedance



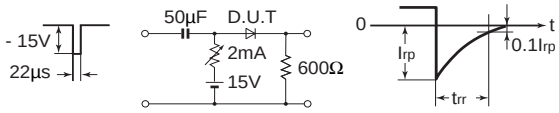
Transient thermal impedance



Typical reverse power characteristic
(Non-repetitive)



Reverse recovery time (trr) test circuit



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