

## 200V, 20A ULTRAFast DUAL RECTIFIERS

### Features

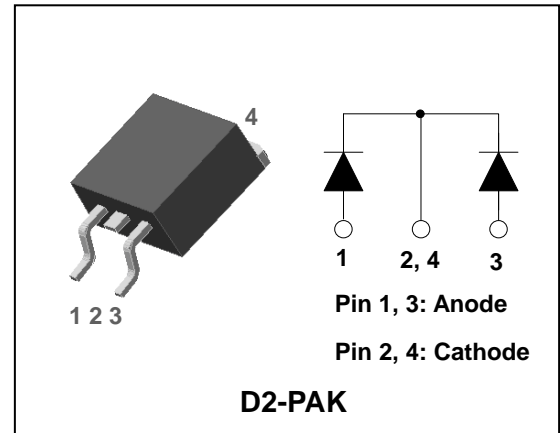
- Low forward voltage drop and leakage current
- Ultrafast reverse recovery time ( $t_{rr} < 30\text{ns}$ )
- Low power loss and high efficiency
- Dual common cathode rectifier construction
- Full lead (Pb)-free and RoHS compliant device

### Applications

- Switching power supply
- Power inverters
- Free-wheeling diode
- Power conversion system
- Motor drives

### Description

The SF20D200D2 is an ultrafast rectifier. It has a low forward voltage drop and reverse recovery time ( $t_{rr} < 30\text{ns}$ ). The device is intended for use as a free wheeling, clamping rectifier in a variety of switching power supplies and other power switching applications.



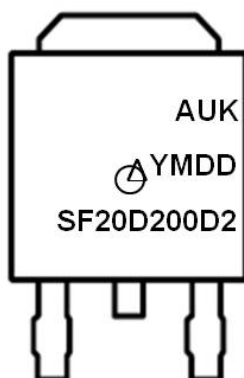
### Product Characteristics

$I_{F(AV)}$	2 X 10A
$V_{RRM}$	200V
$V_{FM}$ at 125°C	1.25V
$t_{rr}$	30ns

### Ordering Information

Device	Marking Code	Package	Packaging
SF20D200D2	SF20D200D2	D2-PAK	Tape & Reel

### Marking Information



AUK = Manufacture Logo

Δ = Control Code of Manufacture

YMDD = Date Code Marking

- . Y = Year Code

- . M = Monthly Code

- . DD = Daily Code

SF20D200D2 = Specific Device Code

## Absolute Maximum Ratings (Limiting Values)

Characteristic		Symbol	Value	Unit
Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage		$V_{RRM}$ $V_{RWM}$ $V_R$	200	V
Maximum average forward rectified current	per diode	$I_{F(AV)}$	10	A
	total device		20	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode		$I_{FSM}$	120	A
Storage temperature range		$T_{stg}$	-45°C to +150°C	°C
Maximum operating junction temperature		$T_j$	150	°C

## Thermal Characteristics

Characteristic		Symbol	Value	Unit
Maximum thermal resistance junction to case	per diode	$R_{th(j-c)}$	3.0	°C/W
	total device		2.6	

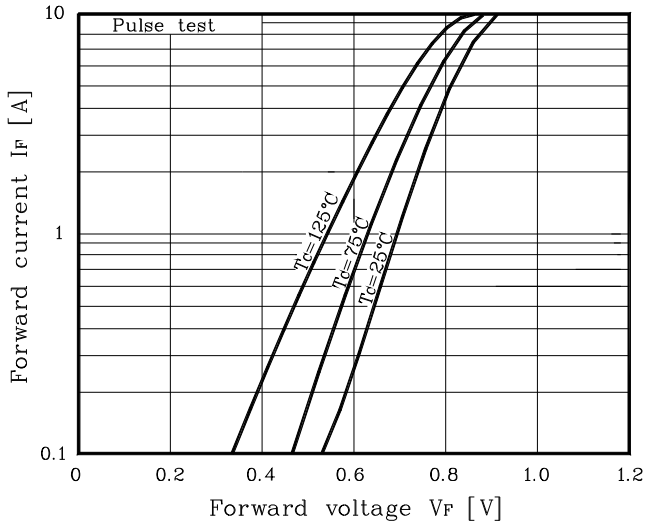
## Electrical Characteristics (Per Diode)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Peak forward voltage drop	$V_{FM}^{(1)}$	$I_{FM} = 10A$	$T_j=25^\circ C$	-	-	0.98	V
			$T_j=125^\circ C$	-	-	0.88	V
Reverse leakage current	$I_{RM}^{(1)}$	$V_R = V_{RRM}$	$T_j=25^\circ C$	-	-	25	uA
			$T_j=125^\circ C$	-	-	500	uA
Reverse recovery time	$t_{rr}$	$I_F = 1A, di/dt = -100 A/us$	-	-	30	ns	
Junction capacitance	$C_j$	$V_R = 4V_{DC}, f=1MHz$	-	150	-	pF	

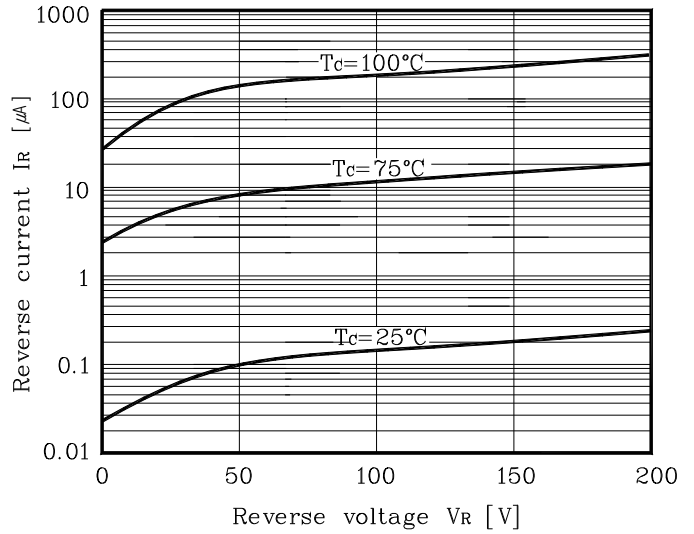
**Note :** (1) Pulse test :  $t_p \leq 380 \mu s$ , Duty cycle  $\leq 2\%$

## Rating and Characteristic Curves (Per Diode)

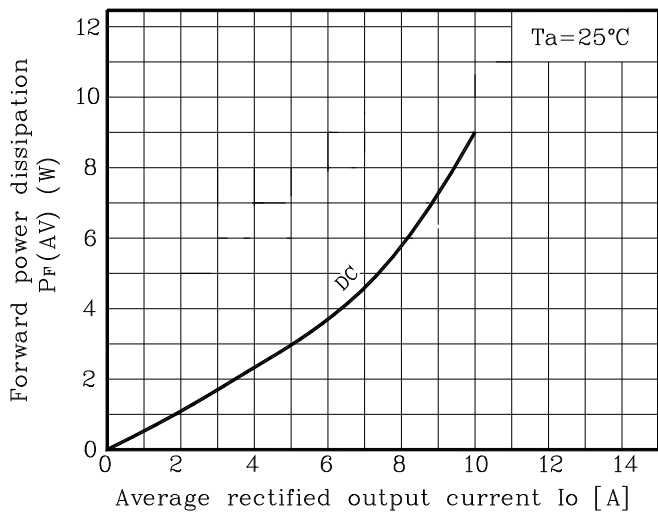
**Fig. 1  $V_F - I_F$**



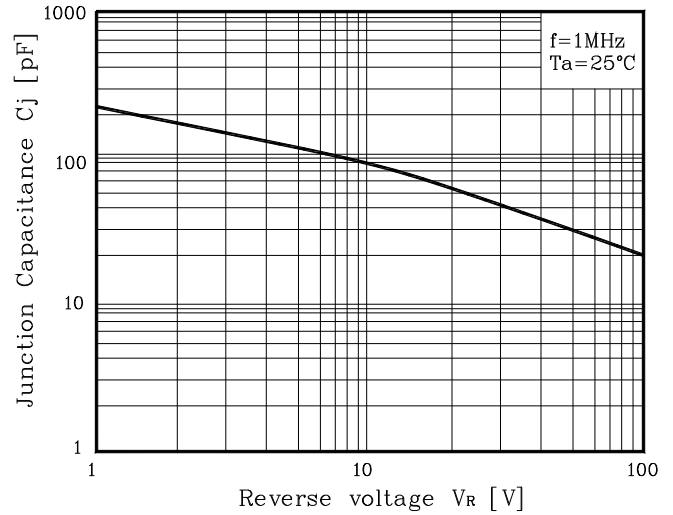
**Fig. 2  $I_R - V_R$**



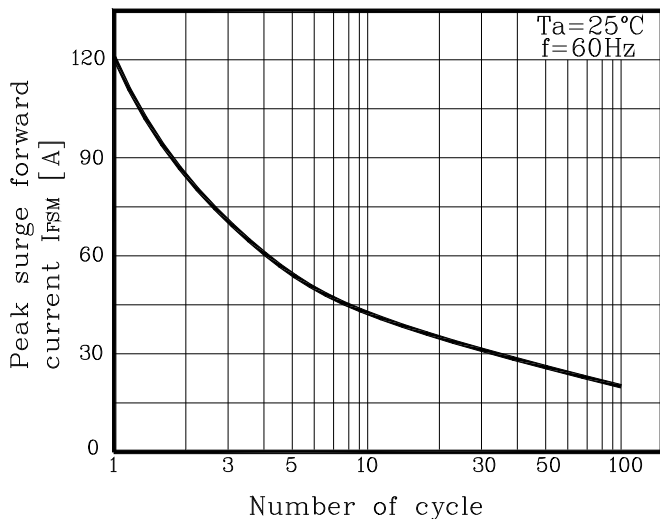
**Fig. 3  $I_O - P_F$**



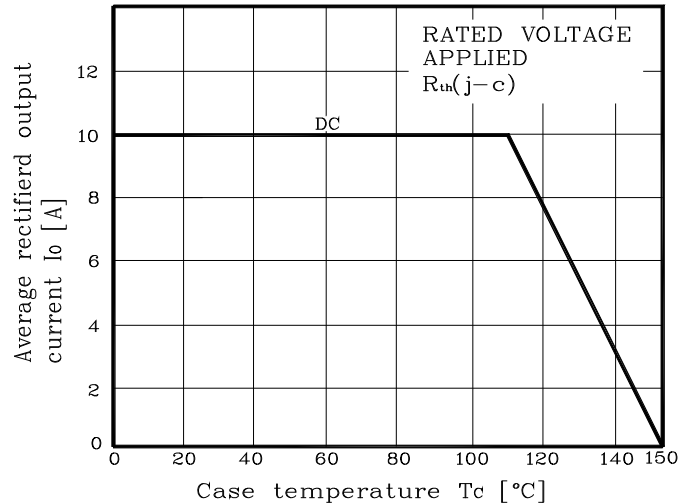
**Fig. 4  $C_T - V_R$**



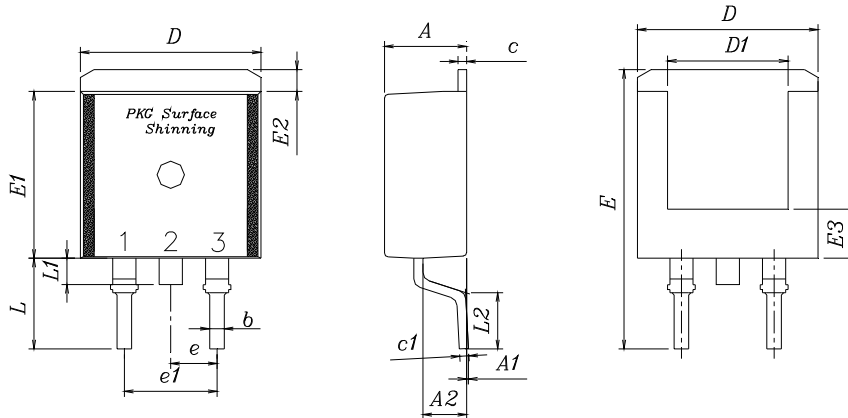
**Fig. 5  $I_{FSM} - \text{Number of cycle}$**



**Fig. 6  $I_O$  derating -  $T_C$**

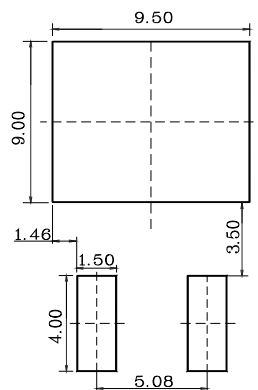


## Package Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	4.35	4.50	4.65	
A1	—	—	0.15	
A2	2.20	2.40	2.60	
b	0.70	0.80	0.90	
c	0.40	0.50	0.60	
c1	0.40	0.50	0.60	
D	9.80	10.00	10.20	
D1	6.40	6.60	6.80	
E	15.00	15.40	15.80	
E1	9.05	9.20	9.35	
E2	1.00	1.20	1.40	
E3	2.50	2.70	2.90	
e	2.34	2.54	2.74	
e1	4.88	5.08	5.28	
L	4.60	5.00	5.40	
L1	1.40	1.45	1.50	
L2	2.50	—	—	

※ Recommend PCB solder land (Unit: mm)



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