

# SF20D600D2

**Ultrafast Recovery Rectifier** 

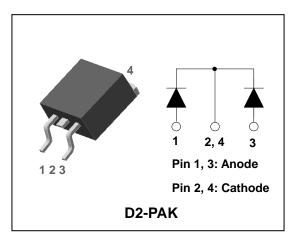
## 600V, 20A ULTRAFAST DUAL RECTIFIERS

#### **Features**

- Low forward voltage drop and leakage current
- Ultrafast reverse recovery time (trr<35ns)
- · 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



#### **Product Characteristics**

I <sub>F(AV)</sub>	2 x 10A		
$V_{RRM}$	600V		
V <sub>FM</sub> @ Tj=125℃	1.68V		
t <sub>rr</sub>	35ns		

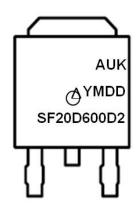
#### Description

The SF20D600D2 is an ultrafast rectifier. It has a low forward voltage drop and reverse recovery time (trr<35ns). The device is intended for use as a free wheeling, clamping rectifier in a variety of switching power supplies and other power switching applications.

### **Ordering Information**

Device	Marking Code	Package	Packaging
SF20D600D2	SF20D600D2	D2-PAK	Tape & Reel

#### **Marking Information**



AUK = Manufacture Logo

 $\Delta$  = Control Code of Manufacture

YMDD = Date Code Marking

-. Y = Year Code

-. M = Monthly Code

-. DD = Daily Code

SF20D600D2 = Specific Device Code

KSD-D6S010-000 1

# **Absolute Maximum Ratings (Limiting Values)**

Characteristic		Symbol	Value	Unit	
Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage		$egin{array}{c} V_{RRM} \ V_{RWM} \ V_{R} \end{array}$	600	٧	
Maximum average forward rectified current	per diode		10	А	
Maximum average forward rectified current	total device	I <sub>F(AV)</sub>	20		
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode		I <sub>FSM</sub>	100	А	
Storage temperature range		T <sub>stg</sub>	-45℃ to +150℃	${\mathbb C}$	
Maximum operating junction temperature		T <sub>j</sub>	150	$^{\circ}$	

# **Thermal Characteristics**

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

# **Electrical Characteristics (Per Diode)**

Characteristic	Symbol	Test Condition		Min.	Тур.	Max.	Unit
Peak forward voltage drop	V <sub>FM</sub> <sup>(1)</sup>	I <sub>FM</sub> = 10A	T <sub>j</sub> =25℃	-	-	1.90	V
			T <sub>j</sub> =125℃	-	-	1.68	٧
Reverse leakage current	I <sub>RM</sub> <sup>(1)</sup>	$V_R = V_{RRM}$	T <sub>j</sub> =25℃	-	-	20	uA
			T <sub>j</sub> =125℃	-	-	200	uA
Reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> = 1A, di/dt =-100 A/us		-	-	35	ns
Junction capacitance	C <sub>j</sub>	$V_R = 4V_{DC}$ , f=1MHz		-	70	-	pF

**Note :** (1) Pulse test :  $t_P \le 380~\mu\text{s}$ , Duty cycle  $\le 2\%$ 

KSD-D6S010-000 2

# **Rating and Characteristic Curves (Per Diode)**

Fig. 1) Typical Forward Characteristics

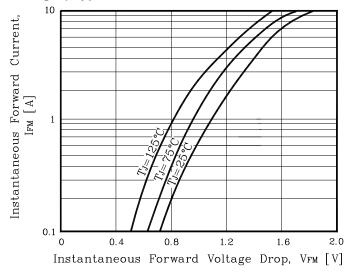
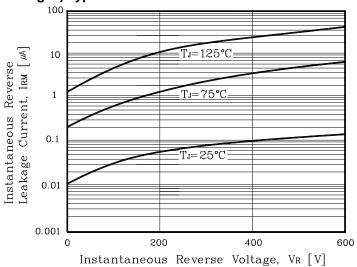


Fig. 2) Typical Reverse Characteristics



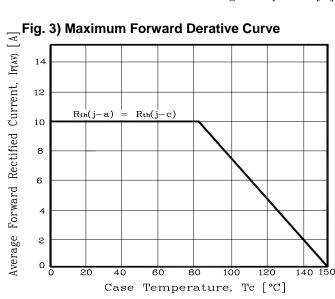


Fig. 4) Forward Power Dissipation

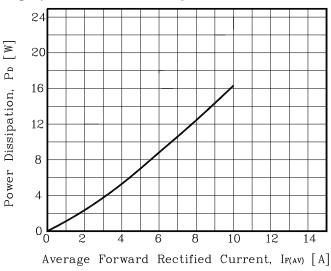


Fig. 5) Maximum Non-Repetitive Peak Forward **Surge Current** 

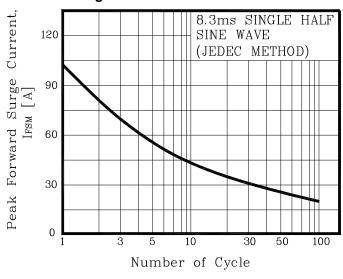
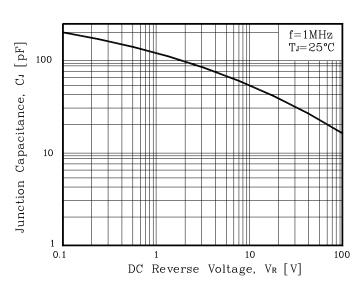


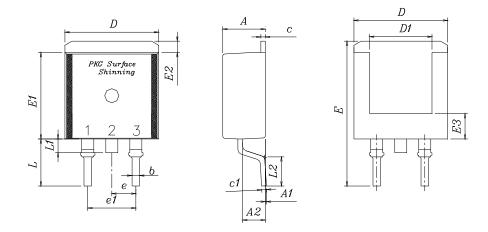
Fig. 6) Typical Junction Capacitance



3 KSD-D6S010-000

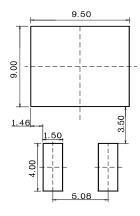
4

# **Package Outline Dimension**



	,	MILLIMET		
SYMBOL		NOTE		
,	MINIMUM	11012		
Α	4.35	4.50	4.65	
A1	_	_	0.15	
A2	2.20	2.40	2.60	
b	0.70	0.80	0.90	
С	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	
е	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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KSD-D6S010-000 5