July 2010



KBU6A - KBU6M Bridge Rectifiers

Features

- · High surge current capability.
- · Reliable construction technique.
- · Ideal for printed circuit board.
- · UL Certificate # E326243.



Absolute Maximum Ratings* T_A= 25°C unless otherwise noted

Symbol	Parameter	Value						Units	
		6A	6B	6D	6G	6J	6K	6M	UiillS
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	V
V _{RMS}	Maximum RMS Bridge Input Voltage		70	140	280	420	560	700	V
V _R	DC Reverse Voltage (Rated V _R)	50	100	200	400	600	800	1000	V
I _{F(AV)}	Average Rectified Forward Current, @ T _A = 65°C	6.0			Α				
I _{FSM}	Non-repetitive Peak Forward Surge Current	250			Α				
T _{STG}	Storage Temperature Range	-55 to +150			°C				
TJ	Operating Junction Temperature -55 to +150				°C				

^{*} These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics

Symbol	Parameter	Value	Units
P_{D}	Power Dissipation	6.7	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient,* per leg	8.6	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction to Lead,* per leg	4.0	°C/W

^{*} Device mounted on PCB with 0.375 " (9.5 mm) lead length and 0.5 x 0.5" (12 x 12 mm) copper pads.

Electrical Characteristics T_A= 25°C unless otherwise noted

Symbol	Parameter	Value	Units	
V _F	Forward Voltage, per bridge @ 6.0 A	1.0	V	
I _R	Reverse Current, total bridge @ rated V_R T_A = 25°C T_A = 100°C	5.0 500	μA μA	

1

Typical Performance Characteristics

Figure 1. Forward Current Derating Curve

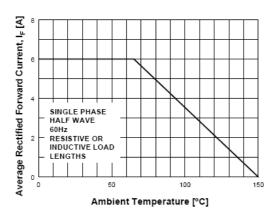


Figure 2. Non-Repetitive Surge Current

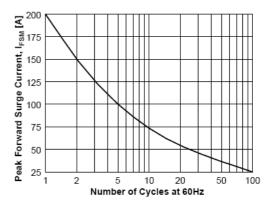


Figure 3. Forward Voltage Characteristics

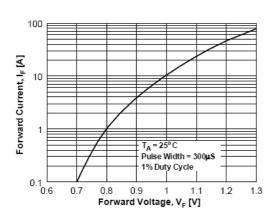
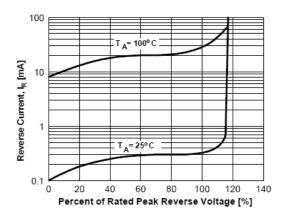


Figure 4. Reverse Current vs Reverse Voltage





SYSTEM ®*

pwer

TinyBoost™

TinyBuck™

TinyCalc™

TinyLogic[®]

TINYOPTO™

TinyPower™

TinyPWM™

TinyWire™

μSerDes™

XS™

TriFault Detect™

TRUECURRENT™*

The Power Franchise®

TRADEMARKS

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

AccuPower™ Auto-SPM™ Build it Now™

 $\mathsf{CorePLUS}^{\scriptscriptstyle\mathsf{TM}}$ CorePOWER™ $CROSSVOLT^{\text{TM}}$ $\mathsf{CTL}^{\mathsf{TM}}$

Current Transfer Logic™ DEUXPEED[®] Dual Cool™ EcoSPARK® EfficientMax™ $\mathsf{ESBC}^{\mathsf{TM}}$

Fairchild[®] Fairchild Semiconductor® FACT Quiet Series™ FACT® FAST®

FastvCore™ FETBench™ FlashWriter®* **FPS™**

FRFET® Global Power Resource SM

Green FPS™ Green FPS™ e-Series™

Gmax™ GTO™ IntelliMAX™ ISOPLANAR™ MegaBuck™

MIČROCOUPLER™ MicroFET™ MicroPak™ MicroPak2™ MillerDrive™ MotionMax™ Motion-SPM™ OptoHiT™ OPTOLOGIC®

OPTOPLANAR®

PDP SPM™

Power-SPM™ PowerTrench® PowerXS™

Programmable Active Droop™

QFĔT[®] QS™ Quiet Series™ RapidConfigure™ **○**TM

Saving our world, 1mW/W/kW at a time™ SignalWise™

SmartMax™ SMART START™ SPM® STEALTH™ SuperFET™ SuperSOT™-3 SuperSOT™-6 SuperSOT™-8 SupreMOS[®] SyncFET™

UHC® Ultra FRFET™ UniFET™ VCX™ Sync-Lock™ VisualMax™

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

- 1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
- 2. A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

ANTI-COUNTERFEITING POLICY

Fairchild Semiconductor Corporation's Anti-Counterfeiting Policy. Fairchild's Anti-Counterfeiting Policy is also stated on our external website, www.fairchildsemi.com, under Sales Support.

Counterfeiting of semiconductor parts is a growing problem in the industry. All manufacturers of semiconductor products are experiencing counterfeiting of their parts. Customers who inadvertently purchase counterfeit parts experience many problems such as loss of brand reputation, substandard performance, failed applications, and increased cost of production and manufacturing delays. Fairchild is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. Fairchild strongly encourages customers to purchase Fairchild parts either directly from Fairchild or from Authorized Fairchild Distributors who are listed by country on our web page cited above. Products customers buy either from Fairchild directly or from Authorized Fairchild Distributors are genuine parts, have full traceability, meet Fairchild's quality standards for handling and storage and provide access to Fairchild's full range of up-to-date technical and product information. Fairchild and our Authorized Distributors will stand behind all warranties and will appropriately address any warranty issues that may arise. Fairchild will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. Fairchild is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Product Status	Definition
Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.
	First Production Full Production

Rev. 149

^{*} Trademarks of System General Corporation, used under license by Fairchild Semiconductor.