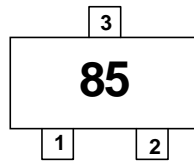
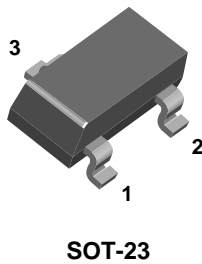


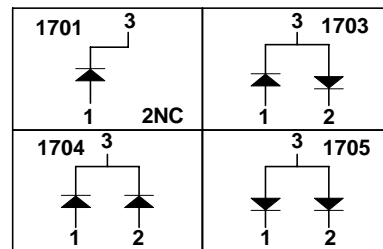
MMBD1701/A / 1703/A / 1704/A / 1705/A



MARKING

MMBD1701	85	MMBD1701A	85A
MMBD1703	87	MMBD1703A	87A
MMBD1704	88	MMBD1704A	88A
MMBD1705	89	MMBD1705A	89A

Connection Diagrams



Small Signal Diodes Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Maximum Repetitive Reverse Voltage	30	V
$I_{F(AV)}$	Average Rectified Forward Current	50	mA
I_{FSM}	Non-repetitive Peak Forward Surge Current Pulse Width = 1.0 second	250	mA
T_{stg}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_J	Operating Junction Temperature	150	$^\circ\text{C}$

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

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

Thermal Characteristics

Symbol	Parameter	Value	Units
P_D	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C/W}$

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
V_R	Breakdown Voltage	$I_R = 5.0 \mu\text{A}$	30		V
V_F	Forward Voltage	$I_F = 10 \mu\text{A}$	420	500	mV
		$I_F = 100 \mu\text{A}$	520	610	mV
		$I_F = 1.0 \text{ mA}$	640	740	mV
		$I_F = 10 \text{ mA}$	760	880	mV
		$I_F = 20 \text{ mA}$	810	950	mV
		$I_F = 50 \text{ mA}$	0.89	1.1	V
I_R	Reverse Current	$V_R = 20 \text{ V}$		50	nA
C_T	Total Capacitance	$V_R = 0, f = 1.0 \text{ MHz}$		1.0	pF
t_{rr}	Reverse Recovery Time			0.7	ns
	MMBD1701-1705	$I_F = I_R = 10 \text{ mA}, I_{RR} = 1.0 \text{ mA}, R_L = 100 \Omega$			
	MMBD1701A-1705A	$I_F = I_R = 10 \text{ mA}, I_{RR} = 1.0 \text{ mA}, R_L = 100 \Omega$		1.0	ns

Typical Characteristics

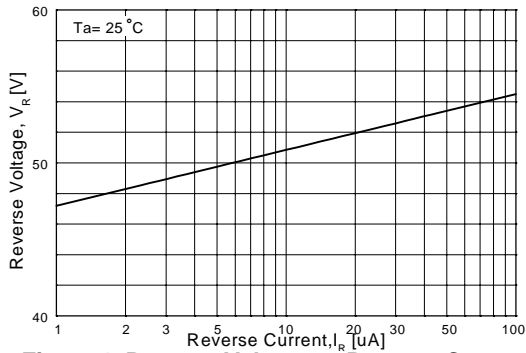


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100 uA

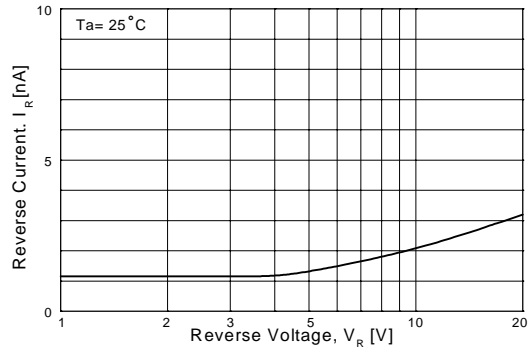


Figure 2. Reverse Current vs Reverse Voltage
IR - 1 to 22V

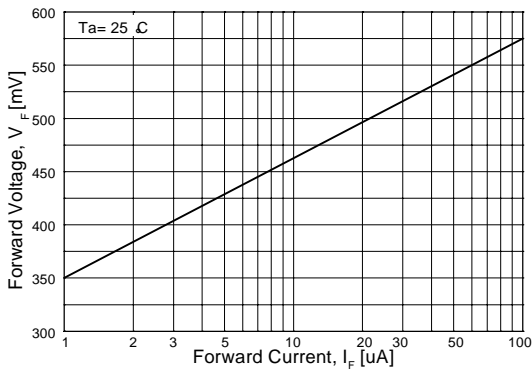


Figure 3. Forward Voltage vs Forward Current
VF - 1.0 to 100 uA

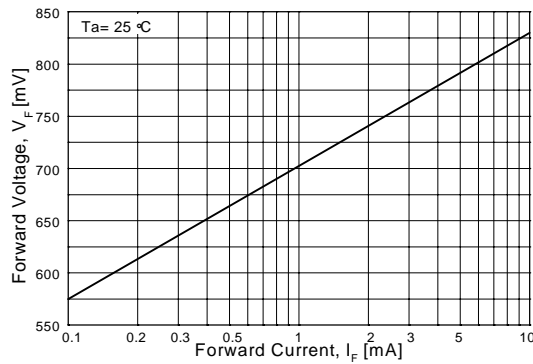


Figure 4. Forward Voltage vs Forward Current
VF - 0.1 to 10 mA

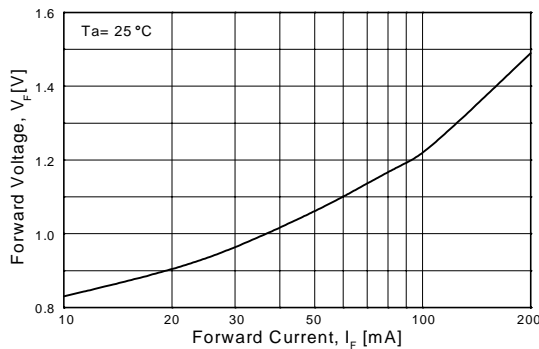


Figure 5. Forward Voltage vs Forward Current
VF - 10 - 200 mA

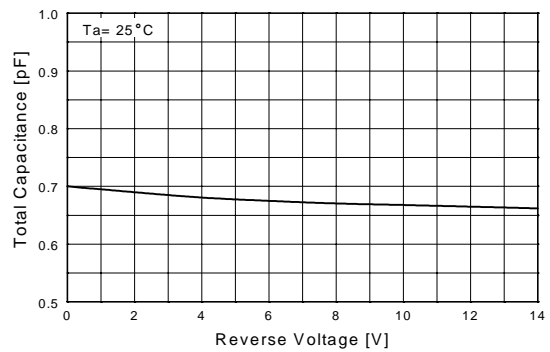


Figure 6. Total Capacitance vs Reverse Current

Typical Characteristics (continued)

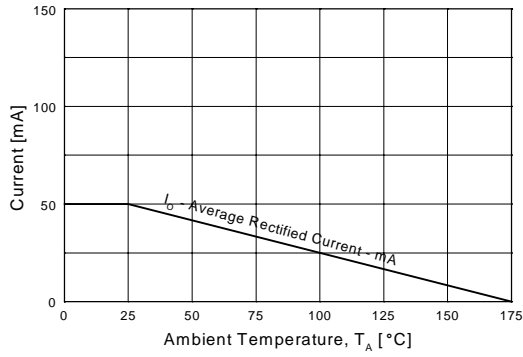


Figure 7. Average Rectified Current (I_o) versus Ambient Temperature (T_A)

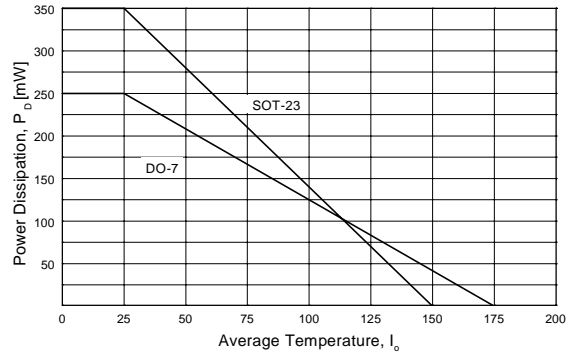


Figure 8. Power Derating Curve

TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACE _x TM	FAST [®]	OPTOLOGIC TM	SMART START TM	VCX TM
Bottomless TM	FAST _r TM	OPTOPLANAR TM	STAR*POWER TM	
CoolFET TM	FRFET TM	PACMAN TM	Stealth TM	
CROSSVOLT TM	GlobalOptoisolator TM	POP TM	SuperSOT TM -3	
DenseTrench TM	GTO TM	Power247 TM	SuperSOT TM -6	
DOMET TM	HiSeC TM	PowerTrench [®]	SuperSOT TM -8	
EcoSPARK TM	ISOPLANAR TM	QFET TM	SyncFET TM	
E ² CMOS TM	LittleFET TM	QST TM	TinyLogic TM	
EnSigna TM	MicroFET TM	QT Optoelectronics TM	TruTranslation TM	
FACT TM	MicroPak TM	Quiet Series TM	UHC TM	
FACT Quiet Series TM	MICROWIRE TM	SILENT SWITCHER [®]	UltraFET [®]	

STAR*POWER is used under license

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.

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.

As used herein:

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, or (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 significant injury to the user.
2. A critical component is 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.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.