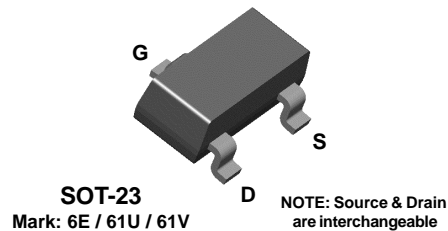
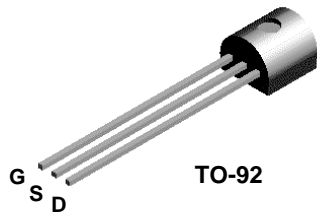


2N5460
2N5461
2N5462

MMBF5460
MMBF5461
MMBF5462



P-Channel General Purpose Amplifier

This device is designed primarily for low level audio and general purpose applications with high impedance signal sources. Sourced from Process 89.

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

Symbol	Parameter	Value	Units
V_{DG}	Drain-Gate Voltage	- 40	V
V_{GS}	Gate-Source Voltage	40	V
I_{GF}	Forward Gate Current	10	mA
T_J, T_{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°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 TA = 25°C unless otherwise noted

Symbol	Characteristic	Max		Units
		2N5460-5462	*MMBF5460-5462	
P_D	Total Device Dissipation Derate above 25°C	350	225	mW
		2.8	1.8	mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125		°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	556	°C/W

*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

2N5460 / 5461 / 5462 / MMBF5460 / MMBF5461 / MMBF5462

P-Channel General Purpose Amplifier

(continued)

Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
--------	-----------	-----------------	-----	-----	-----	-------

OFF CHARACTERISTICS

V _{(BR)GSS}	Gate-Source Breakdown Voltage	I _G = 10 μA, V _{DS} = 0	40			V
I _{GSS}	Gate Reverse Current	V _{GS} = 20 V, V _{DS} = 0			5.0	nA
		V _{GS} = 20 V, V _{DS} = 0, T _A = 100°C			1.0	μA
V _{GS(off)}	Gate-Source Cutoff Voltage	V _{DS} = 15 V, I _D = 1.0 μA	5460	0.75	6.0	V
			5461	1.0	7.5	V
			5462	1.8	9.0	V
V _{GS}	Gate-Source Voltage	V _{DS} = 15 V, I _D = 0.1 mA	5460	0.5	4.0	V
		V _{DS} = 15 V, I _D = 0.2 mA	5461	0.8	4.5	V
		V _{DS} = 15 V, I _D = 0.4 mA	5462	1.5	6.0	V

ON CHARACTERISTICS

I _{DSS}	Zero-Gate Voltage Drain Current*	V _{DS} = 15 V, V _{GS} = 0	5460	- 1.0	- 5.0	mA
			5461	- 2.0	- 9.0	mA
			5462	- 4.0	- 16	mA

SMALL SIGNAL CHARACTERISTICS

g _{fs}	Forward Transfer Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 kHz				
		5460	1000		4000	μmhos
		5461	1500		5000	μmhos
		5462	2000		6000	μmhos
g _{os}	Output Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 kHz			75	μmhos
C _{iss}	Input Capacitance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 MHz		5.0	7.0	pF
C _{rss}	Reverse Transfer Capacitance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 MHz		1.0	2.0	pF
NF	Noise Figure	V _{DS} = 15 V, V _{GS} = 0, R _G = 1.0 megohm, f = 100 Hz, BW = 1.0 Hz		1.0	2.5	dB
e _n	Equivalent Short-Circuit Input Noise Voltage	V _{DS} = 15 V, V _{GS} = 0, f = 100 Hz, BW = 1.0 Hz		60	115	nV/√Hz

*Pulse Test: Pulse Width ≤ 300 ms, Duty Cycle ≤ 2%

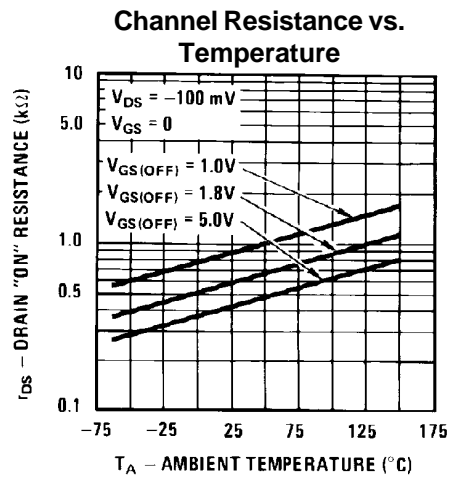
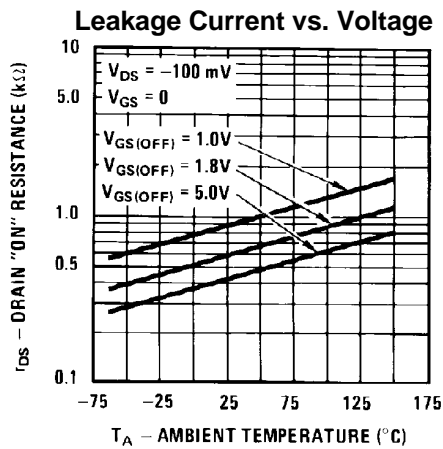
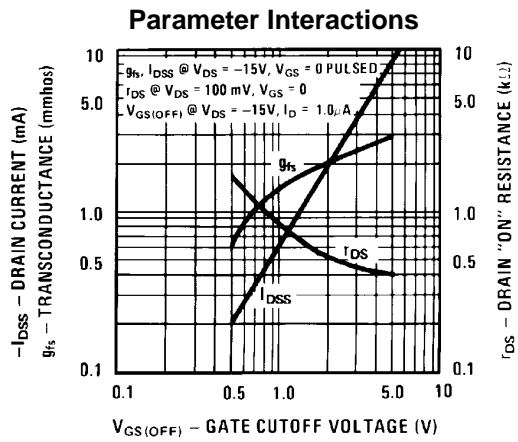
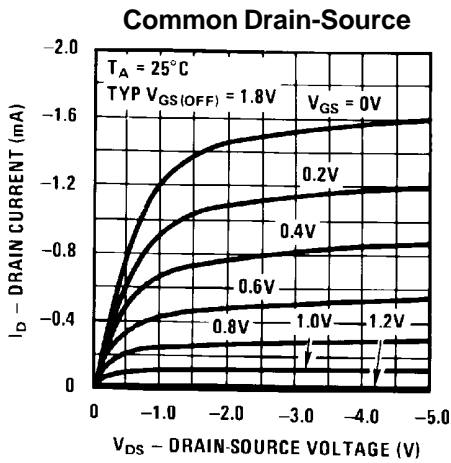
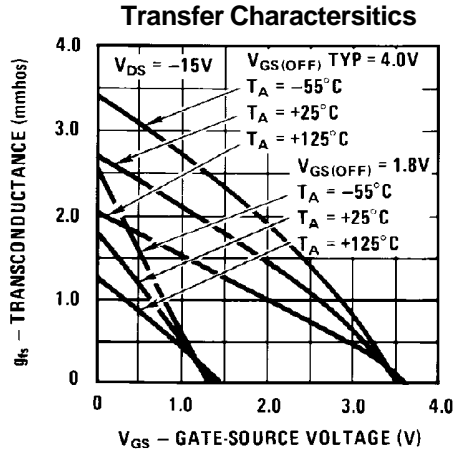
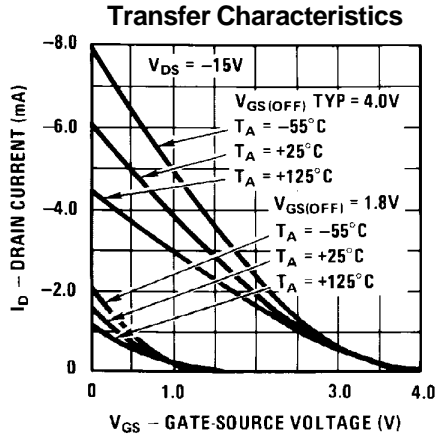
2N5460 / 5461 / 5462 / MMBF5460 / MMBF5461 / MMBF5462

P-Channel General Purpose Amplifier

(continued)

2N5460 / 5461 / 5462 / MMBF5460 / MMBF5461 / MMBF5462

Typical Characteristics (continued)



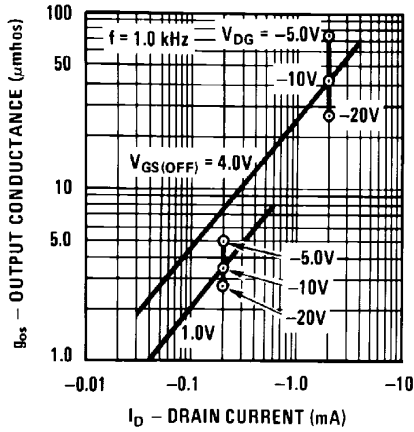
P-Channel General Purpose Amplifier

(continued)

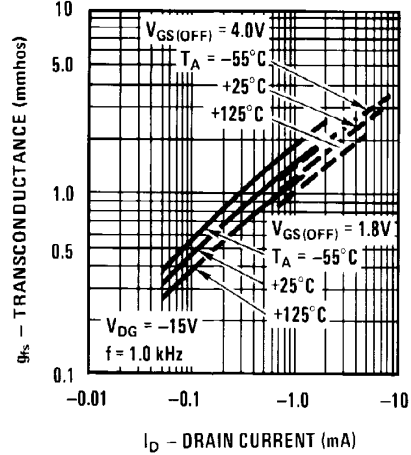
2N5460 / 5461 / 5462 / MMBF5460 / MMBF5461 / MMBF5462

Typical Characteristics (continued)

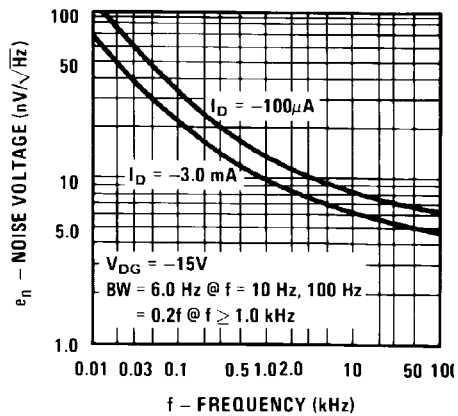
Output Conductance vs. Drain Current



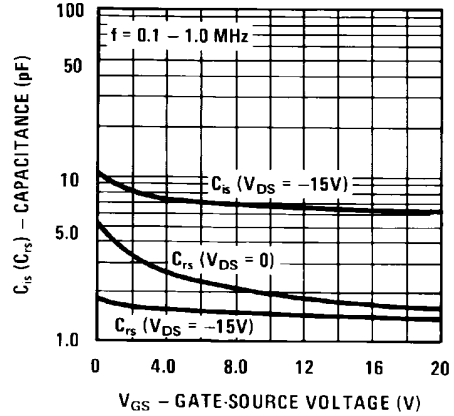
Transconductance vs. Drain Current



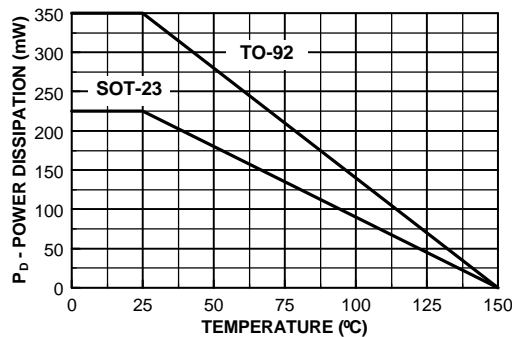
Noise Voltage vs. Frequency



Capacitance vs. Voltage



Power Dissipation vs. Ambient Temperature



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

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.

Rev. H2