

Is Now Part of

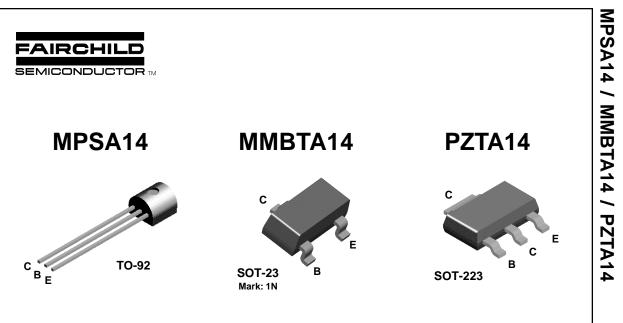


ON Semiconductor®

To learn more about ON Semiconductor, please visit our website at <u>www.onsemi.com</u>

Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

ON Semiconductor and the ON Semiconductor logo are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized applications, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an equif prese



NPN Darlington Transistor

This device is designed for applications requiring extremely high current gain at collector currents to 1.0 A. Sourced from Process 05.

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

Symbol	Parameter	Value	Units
V _{CES}	Collector-Emitter Voltage	30	V
V _{CBO}	Collector-Base Voltage	30	V
V _{EBO}	Emitter-Base Voltage	10	V
I _C	Collector Current - Continuous	1.2	А
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	Мах			Units
		MPSA14	*MMBTA14	**PZTA14	
P _D	Total Device Dissipation Derate above 25°C	625 5.0	350 2.8	1,000 8.0	mW mW/∘C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3			°C/W
$R_{ ext{ hetaJA}}$	Thermal Resistance, Junction to Ambient	200	357	125	°C/W

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

** Device mounted on FR-4 PCB 36 mm X 18 mm X 1.5 mm; mounting pad for the collector lead min. 6 cm².

NPN Darlington Transistor (continued)

Electrical Characteristics TA = 25°C unless otherwise noted					
Symbol	Parameter Test Conditions Min Max Un				Units
OFF CHARACTERISTICS					
V _{(BR)CES}	Collector-Emitter Breakdown Voltage	$I_{\rm C} = 100 \ \mu A, \ I_{\rm B} = 0$	30		V
I _{CBO}	Collector-Cutoff Current $V_{CB} = 30 \text{ V}, I_E = 0$ 100		nA		
I _{EBO}	Emitter-Cutoff Current $V_{EB} = 10 \text{ V}, I_C = 0$			100	nA

ON CHARACTERISTICS*

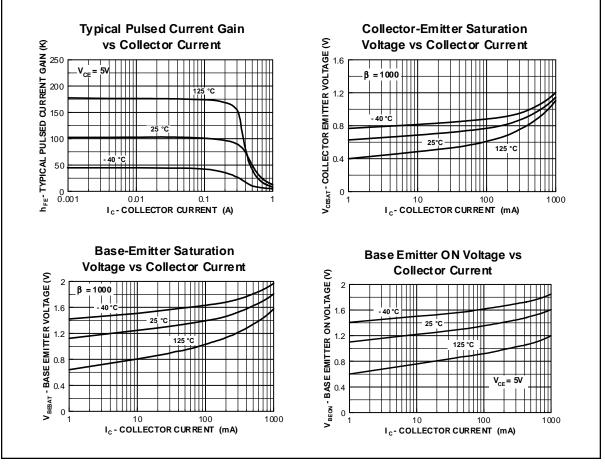
h _{FE}	DC Current Gain	$I_{C} = 10 \text{ mA}, V_{CE} = 5.0 \text{ V}$ $I_{C} = 100 \text{ mA}, V_{CE} = 5.0 \text{ V}$	10,000 20,000		
V _{CE(sat)}	Collector-Emitter Saturation Voltage	$I_{\rm C} = 100 \text{ mA}, I_{\rm B} = 0.1 \text{ mA}$		1.5	V
V _{BE(on)}	Base-Emitter On Voltage	$I_{C} = 100 \text{ mA}, V_{CE} = 5.0 \text{ V}$		2.0	V

SMALL SIGNAL CHARACTERISTICS

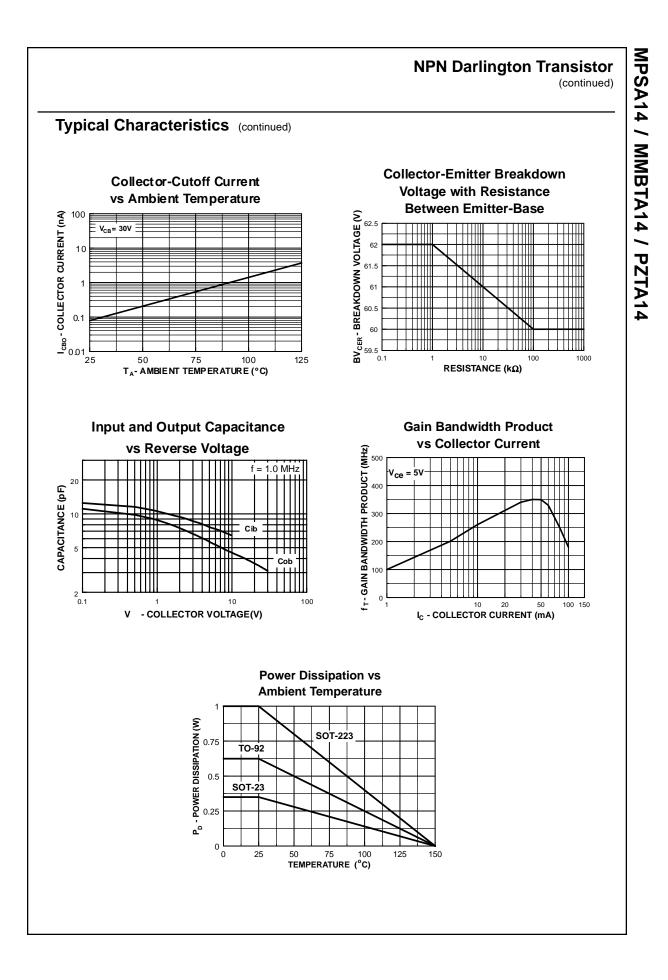
f⊤	Current Gain - Bandwidth Product	$I_{C} = 10 \text{ mA}, V_{CE} = 5 \text{ V},$ f = 100 MHz	125		MHz
----	----------------------------------	---	-----	--	-----

*Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2.0%

Typical Characteristics



MPSA14 / MMBTA14 / PZTA14





©2001 Fairchild Semiconductor Corporation

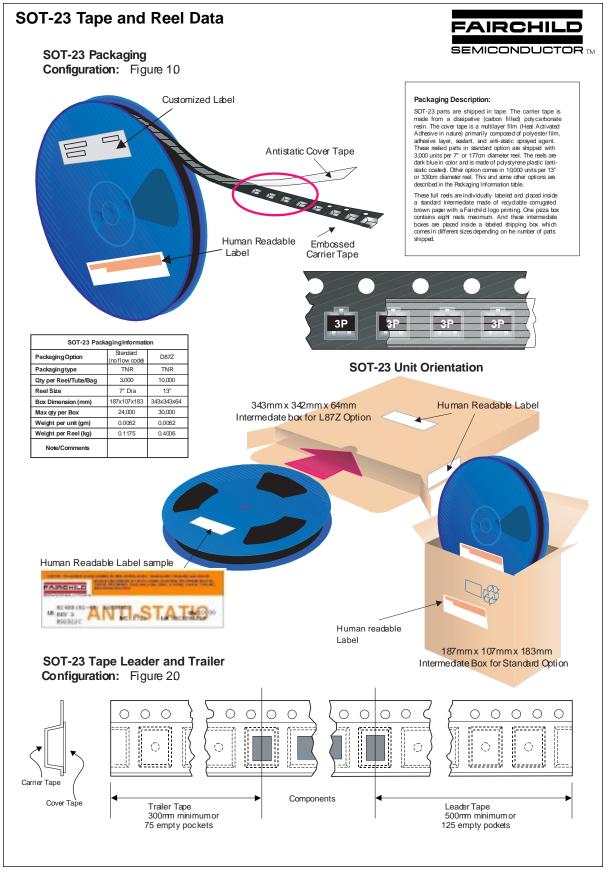
March 2001, Rev. B1





July 1999, Rev. A



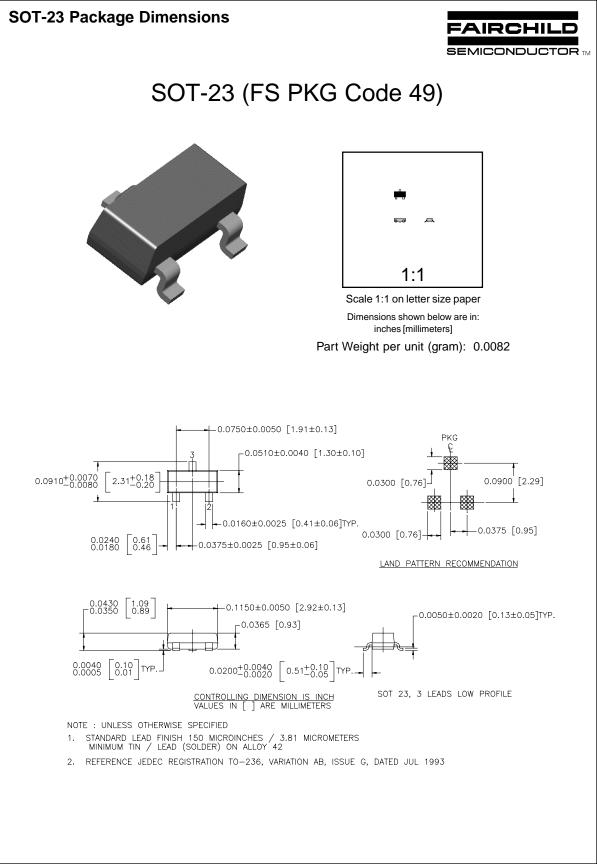


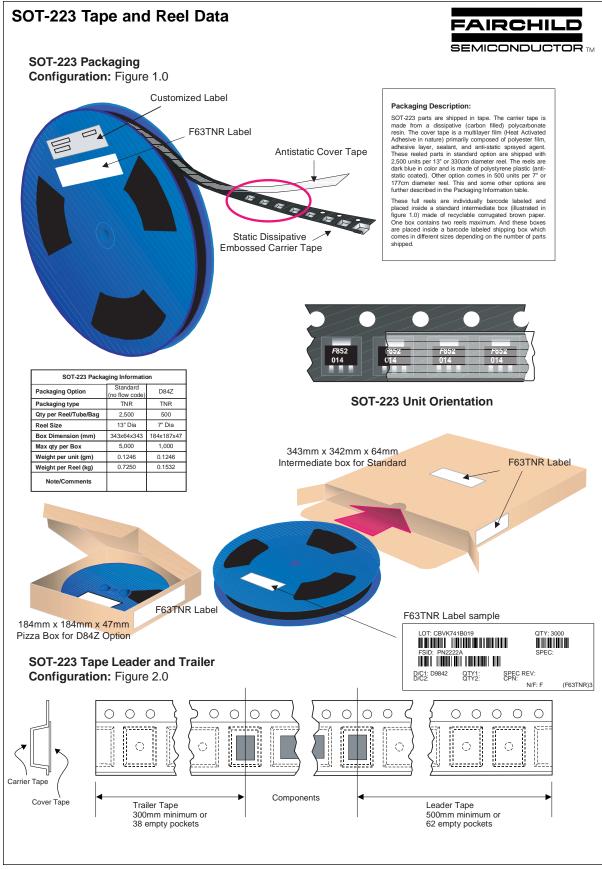
©2000 Fairchild Semiconductor International

September 1999, Rev. C



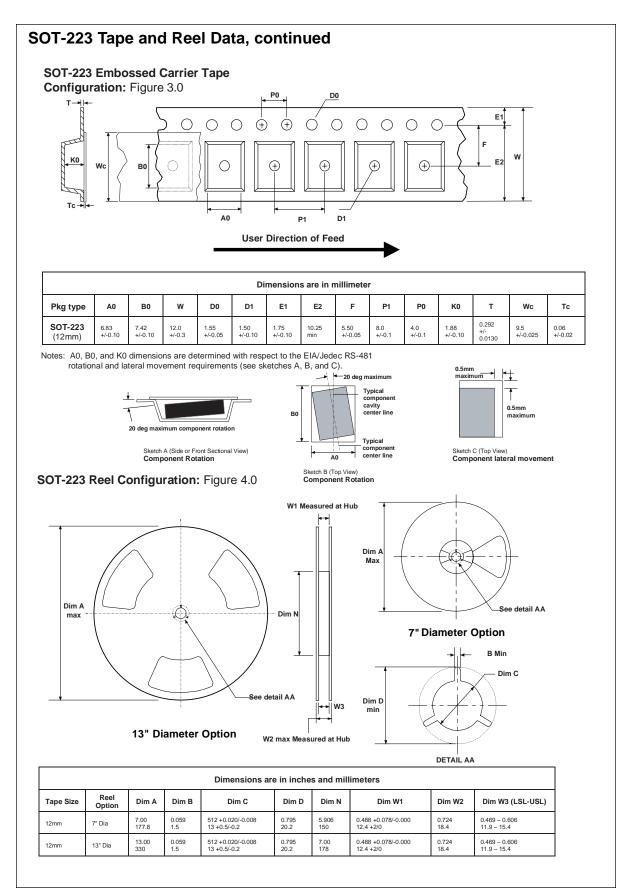
September 1999, Rev. C

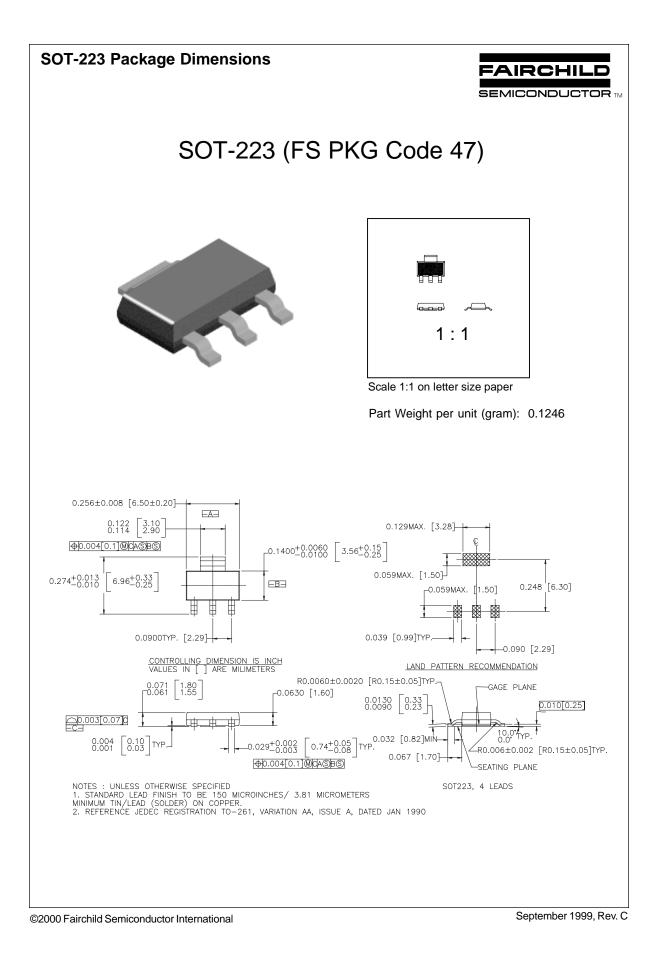




©2000 Fairchild Semiconductor International

September 1999, Rev. B





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.

ACEx™ Bottomless™ CoolFET™ CROSSVOLT™ DOME™ E²CMOS[™] EnSigna™ FACT™ FACT Quiet Series[™] FAST[®]

FASTr™ GlobalOptoisolator™ GTO™ HiSeC™ **ISOPLANAR™** MICROWIRE™ OPTOLOGIC™ **OPTOPLANAR™** PACMAN™ POP™

PowerTrench[®] QFET™ QS™ QT Optoelectronics[™] Quiet Series[™] SILENT SWITCHER® SMART START™ SuperSOT[™]-3 SuperSOT[™]-6 SuperSOT[™]-8

SyncFET™ TinyLogic™ UHC™ VCX™

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.
	1	Rev G

ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at <u>www.onsemi.com/site/pdf/Patent-Marking.pdf</u>. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor has against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death ass

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: orderlit@onsemi.com N. American Technical Support: 800–282–9855 Toll Free USA/Canada Europe, Middle East and Africa Technical Support: Phone: 421 33 790 2910

Japan Customer Focus Center Phone: 81-3-5817-1050 ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

© Semiconductor Components Industries, LLC

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Darlington Transistors category:

Click to view products by ON Semiconductor manufacturer:

Other Similar products are found below :

NJVMJD128T4G 281287X BDV64B NJVMJD117T4G LB1205-L-E 2N6053 MPSA14 TIP140 MPSA13 TIP127L-BP 2N6383 ULN2003ACM/TR 2N7371 2N6058 2N6059 2N6051 MJ2501 MJ3001 2SB1560 2SB852KT146B 2SD2560 TIP112TU BCV27 MMBTA13-TP MMSTA28T146 NTE2557 NJVNJD35N04T4G MPSA29-D26Z FJB102TM BSP61H6327XTSA1 BU941ZPFI 2SD1980TL NTE2350 NTE245 NTE246 NTE2649 NTE46 NTE98 ULN2003ADR2G NTE2344 NTE2349 NTE2405 NTE243 NTE244 NTE247 NTE248 NTE249 NTE253 NTE2548 NTE261