



Is Now Part of



ON Semiconductor®

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

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 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 nor the 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 application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, 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 Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

FAN5622 / FAN5624 / FAN5626 带有单线数字接口的线性 LED 驱动器

产品特性

- 三个线性电流阱 LED 驱动器，可支持2、4或6个LED输出
- 每个 LED 输出的电流阱：
 - 30 mA 最大输出电流
 - 50 mV 压差 @15 mA
 - 通道间匹配优于30%
 - 外接 R_{SET}
- 灵活编程的单线数字控制接口
 - 32级线性调光控制
- 低于 1 μA 关断电流
- 短路、欠压以及热保护
- 宽输入范围：2.7 至 5.5 V
- 小型封装：
 - FAN5622:6-pin Super SOT23
 - FAN5624:10-lead 1.4x1.8x0.55 mm UMLP
 - FAN5626:10-lead 1.6x2.1x0.55 mm MicroPak™MLP

适用范围

- 手机
- 移动互联网设备
- PMP 和 MP3 播放器
- LCD 模块

说明

FAN5622、FAN5624 和 FAN5626 分别为2-、4-、6-电流阱线性 LED 驱动器，用于移动设备，如手机的液晶显示屏或键盘的背光照明。

压差仅为 50 mV，因而无需电感或开关电容即可驱动LED。LED 输出的亮度等级通过单线数字控制接口来编制。用户可编制32级线性调光等级，并通过施加数字脉冲打开或关闭LED。

FAN562x 系列因其 LED 驱动器的低压差而实现的更高的效率。通过整个32级调光获得LED输出的不同通道之间的良好匹配。LED 驱动器还集成了短路检测、欠压以及过热保护功能，从而获得了更为稳定的解决方案。

FAN5622、FAN5624和FAN5626 都采用了非常小巧的封装：分别为 6-pin Super SOT23、10-lead UMLP 以及 10-lead MicroPak™MLP。

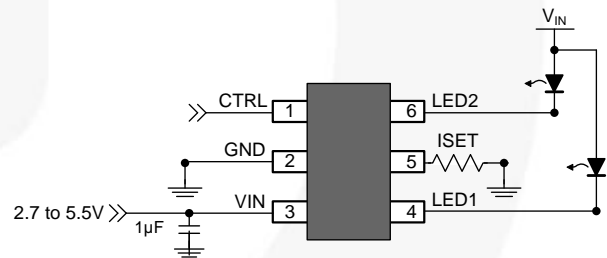


图 1.FAN5622的典型应用

订购信息

器件型号	通道号	温度范围	封装	包装
FAN5622SX	2	-40 至 +85°C	6-Lead SSOT23	卷带
FAN5624UMPX	4	-40 至 +85°C	10-Lead UMLP	卷带
FAN5626LX	6	-40 至 +85°C	10-Lead MicroPak™MLP	卷带

应用框图

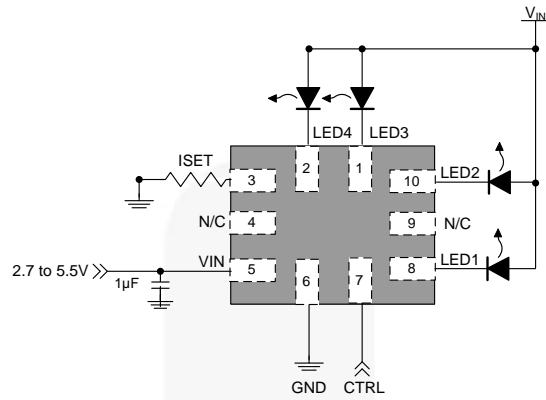


图 2.FAN5624 4 LED 的典型应用

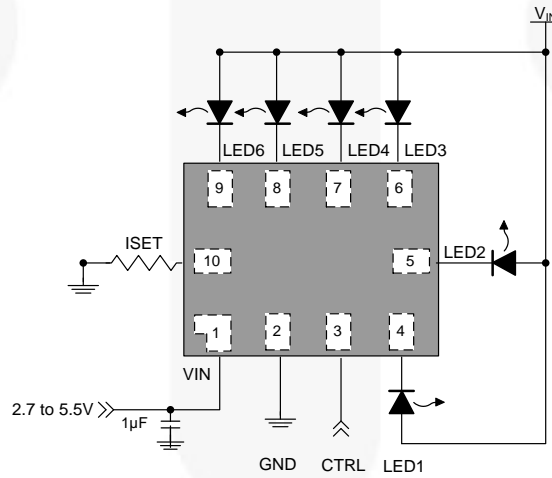


图 3.FAN5626 6 LED 的典型应用

框图

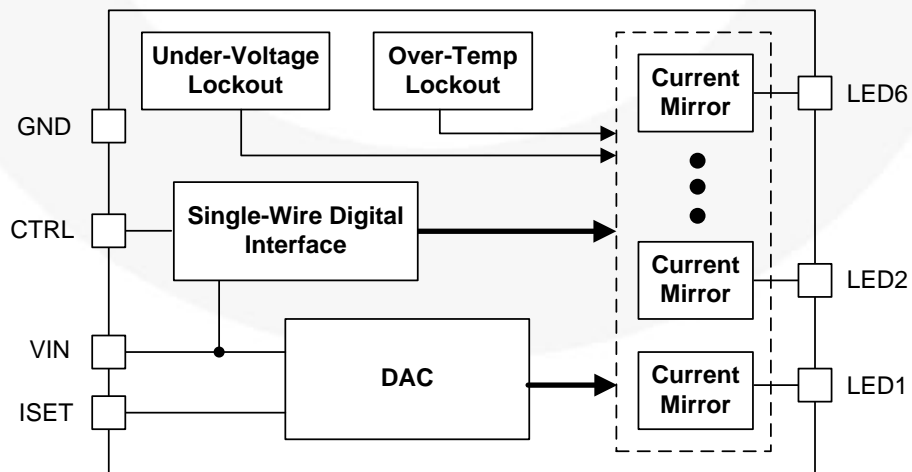


图 4.框图

引脚布局

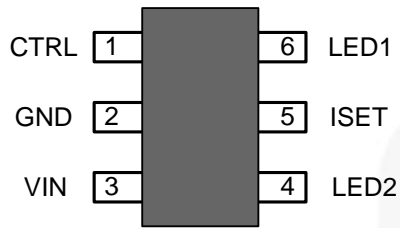


图5.FAN5622:6-Pin SSOT23 顶视图

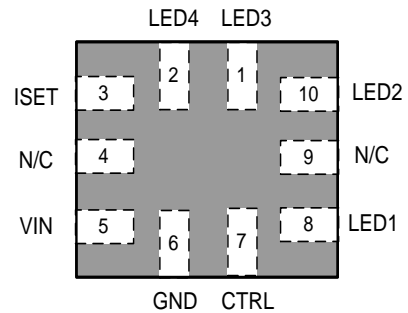


图6.FAN5624:10-Lead UMLP 顶视图

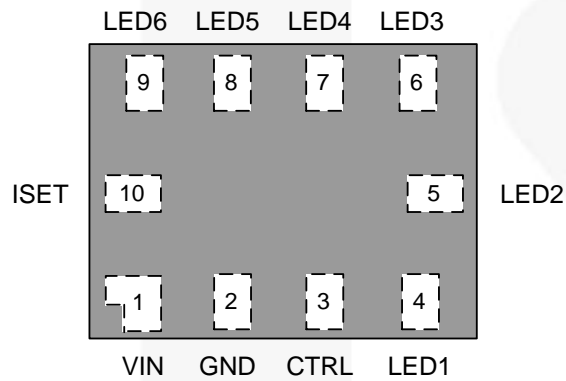


图 7.FAN5626:10-Lead MicroPak™MLP 顶视图

引脚说明

引脚号			名称	说明
FAN5622 SSOT23-6	FAN5624 UMLP10	FAN5626 MicroPak MLP10		
3	5	1	VIN	输入电压。连接至 2.7-5.5 V _{DC} 输入电源。
2	6	2	GND	接地
5	3	10	ISET	LED 电流设置。通过将该引脚通过电阻(R _{SET})接地，可设置满量程 LED 电流。
1	7	3	CTRL	控制 引脚。采用数字脉冲驱动该引脚可编制调光等级。该引脚切勿悬浮。
6	8	4	LED1	LED 阴极 #1。LED 电流阱输出。
4	10	5	LED2	LED 阴极 #2。LED 电流阱输出。
	1	6	LED3	LED 阴极 #3。LED 电流阱输出。
	2	7	LED4	LED 阴极 #4。LED 电流阱输出。
		8	LED5	LED 阴极 #5。LED 电流阱输出。
		9	LED6	LED 阴极 #6。LED 电流阱输出。
	4, 9		N/C	未定义

绝对最大额定值

如果应力超过绝对最大额定值，器件就会毁损。在推荐的工作条件之上，该器件可能无法正常运行或操作，且不建议让器件在这些条件下长期工作。此外，过度暴露在高于推荐的工作条件下，会影响器件的可靠性。绝对最大额定值仅是额定应力值。

符号	参数	最小值	最大值	单位	
V _{CC}	V _{IN} 引脚	-0.3	6.0	V	
	其他引脚 ⁽¹⁾	-0.3	V _{IN} + 0.3	V	
ESD	静电放电防护等级	人体模型满足JESD22-A114		3.0	kV
		充电器件模型满足JESD22-C101		1.5	kV
T _J	结温	-40	+150	°C	
T _{STG}	存储温度	-65	+150	°C	
T _L	引线焊接温度，10秒		+260	°C	

说明：

1. 低于 6.0 V 或 V_{IN}+0.3 V。

推荐工作条件

推荐的操作条件定义了真实器件的工作条件。指定推荐的工作条件，以确保设备的最佳性能达到数据表中的规格。飞兆半导体建议不要超过推荐工作条件，也不能按照绝对最大额定值进行设计。

符号	参数	最小值	最大值	单位
V _{IN}	电源电压范围	2.7	5.5	V
T _A	工作环境温度范围	-40	+85	°C
T _J	工作结点温度范围	-40	+125	°C
I _{LED(FS)}	满量程 LED 电流	5	30	mA

热性能

结-环境之间热阻与具体应用和电路板布局有关。该数据由符合JESD51-JEDEC标准的测试板测得。特别注意的是，不要超过给定环境温度T_A时的结温 T_{J(max)}。

符号	参数	典型值	单位
θ _{JA_SsOT23-6}	结-环境之间热阻，SSOT23-6 封装	235	°C/W
θ _{JA_UMLP10}	结-环境之间热阻，UMLP10 封装 ⁽²⁾	287	°C/W
θ _{JA_MicroPAK_MLP10}	结-环境之间热阻，MicroPak™ MLP10 封装 ⁽³⁾	220	°C/W

说明：

2. 建议最大功耗不超过 132 mW。
3. 建议最大功耗不超过 198 mW。

电气规格

$V_{IN} = 2.7\text{ V}$ 至 5.5 V , $R_{SET} = 19.10\text{ k}\Omega$, $T_A = -40^\circ\text{C}$ 至 $+85^\circ\text{C}$, $V_f = 2.5\text{ V}$ 至 $[3.5\text{ V}$ 或 $V_{IN} - 0.1\text{ V}]$, 相对较小。典型值测量条件为 $T_A = 25^\circ\text{C}$, $V_{IN} = 3.6\text{ V}$ 且 $V_f = 3.2\text{ V}$ 。

符号	参数	工作条件	最小值	典型值	最大值	单位
电源						
I_{SD}	停机电源电流	$V_{IN} = 3.6\text{ V}$, $CTRL = 0$		0.3	1.0	μA
I_{IN}	工作电源电流	FAN5622: $V_{IN} = 3.6\text{ V}$, $I_{LED} = 0\text{ mA}$		0.4	0.8	mA
		FAN5624: $V_{IN} = 3.6\text{ V}$, $I_{LED} = 0\text{ mA}$		0.6	1.0	mA
		FAN5626: $V_{IN} = 3.6\text{ V}$, $I_{LED} = 0\text{ mA}$		0.8	1.2	mA
I_{IH}	控制引脚输入电流	$CTRL = 1.8\text{ V}$		1	250	nA
V_{UVLO}	欠压闭锁阈值	V_{IN} 升		2.50	2.70	V
		V_{IN} 降	2.10	2.30	2.50	V
调节						
I_{FS_LEDx} (MAX)	满量程 LED 输出电流	$I_{LEDx} = 30\text{ mA}$; $x = 1$ 至 6	5		30	mA
I_{LED}	绝对电流精度	$V_{IN} = 2.85\text{ V} - 4.5\text{ V}$; $V_{CATH} = 0.15$ 至 $(1.2\text{ V}$ 或 $V_{IN} = 2.55\text{ V}$, 其相对较小); 满量程电流 $5\text{--}30\text{ mA}$, $T_A = 25^\circ\text{C}$	-10		+10	%
$I_{LED\ MATCH}$	LED 电流匹配 ⁽⁴⁾	$I_{LEDx} = 15\text{ mA}$; $V_{LEDx} = 0.4\text{ V}$, $T_A = 25^\circ\text{C}$	-3		+3	%
V_{ISET}	I_{SET} 驱动电压	$9.53\text{ k}\Omega \leq R_{SET} \leq 56.2\text{ k}\Omega$		1.20		V
I_{RATIO}	I_{SET} 引脚的电流镜像比	$9.53\text{ k}\Omega \leq R_{SET} \leq 56.2\text{ k}\Omega$		240		
ΔI_{OUT_LOAD}	I_{OUT} 负载调节	$V_{IN} = 3.6\text{ V}$, $I_{LEDx} = 15\text{ mA}$, $LED\ V_f = 2.7$ 至 3.5 V ,	-3		+3	%
ΔI_{OUT_LINE}	I_{OUT} 电源调节	$V_{IN} = 2.7$ 至 4.8 V , $I_{LEDx} = 15\text{ mA}$, $V_{CATH} = 0.5\text{ V}$	-4		+4	%
$V_{DROPOUT}$	压差	$V_{IN} = 3.6\text{ V}$; $I_{LED} = 15\text{ mA}$, -10% I_{LED} 跌落		50		mV
		$V_{IN} = 3.6\text{ V}$; $I_{LED} = 30\text{ mA}$, -10% I_{LED} 跌落		60		
TSD	热关闭	结点温度升高		150		$^\circ\text{C}$
		滞环		20		
逻辑输入(CTRL)						
V_{IH}	输入电压高电平		1.2			V
V_{IL}	低电平输入电压				0.4	V
T_{LO}	CTRL LOW 调光时间	$V_{IN} = 3.6\text{ V}$; 参见图17	0.5		300	μs
T_{HI}	级间延时	$V_{IN} = 3.6\text{ V}$; 参见图17	0.5			μs
T_{ON}	CTRL 高电平 至 导通延时	$V_{IN} = 3.6\text{ V}$; 参见图17		250		μs
T_{SD}	CTRL 低电平, 关断脉冲宽度	$V_{IN} = 3.6\text{ V}$; 自 CTRL 的下降沿	1			ms

说明:

4. 分别为 FAN5622、FAN5624 以及 FAN5626 的 2、4、6 LED 电流阱；以下对应于：2、4、6 LED 输出的最大电流阱 (I_{MAX})；2、4、6 LED 输出的最小电流阱 (I_{MIN})；以及平均电流阱 (I_{AVG})。对于所有的 LED 输出，计算两个匹配数值：(I_{MAX}-I_{AVG})/I_{AVG} 和 (I_{AVG}-I_{MIN})/I_{AVG}。选择给定部分的匹配值作为两个中的最高匹配值。既定部分的匹配值应为所有 LED 输出中匹配度最高的。提供的典型规格就是所有部分的最大可能匹配基准。

典型性能特征

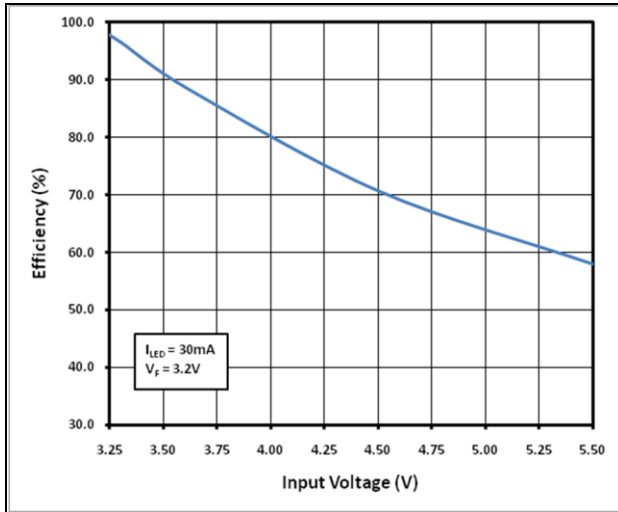


图 8.效率 vs. 输入电压 LED $V_f=3.2 V$

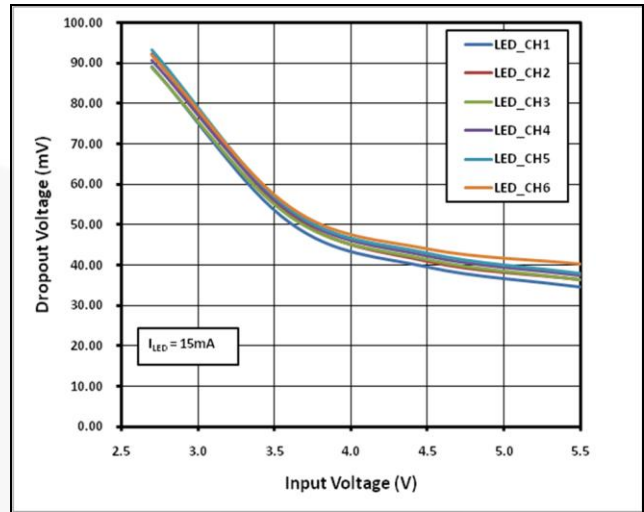


图 9.压差 vs. 输入电压

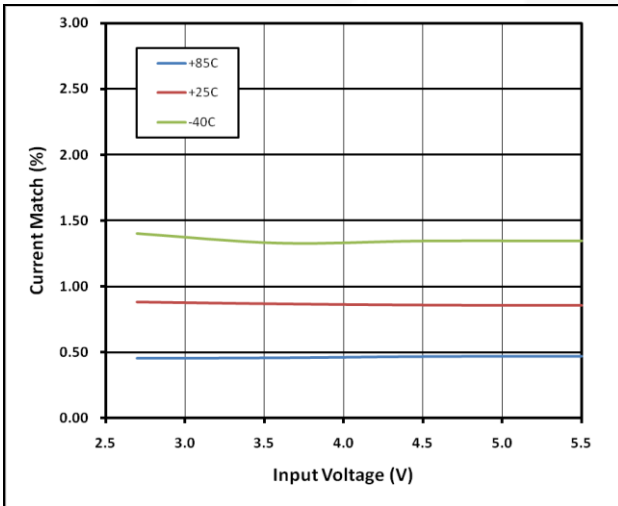


图 10.通道的电流匹配 vs. 输入电压

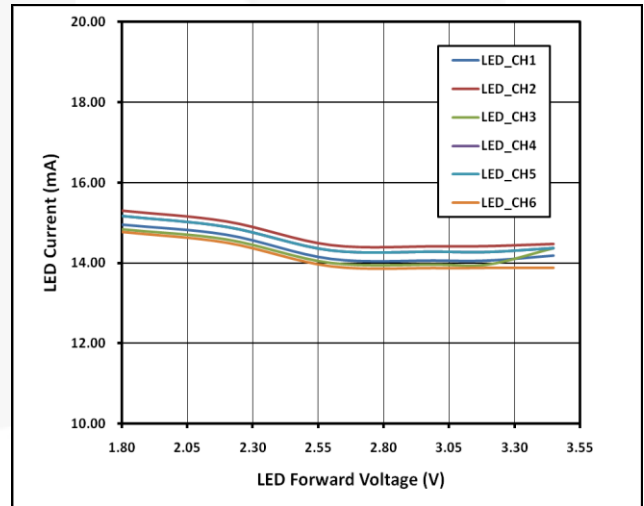


图 11.15 mA 的负载调节 /输出

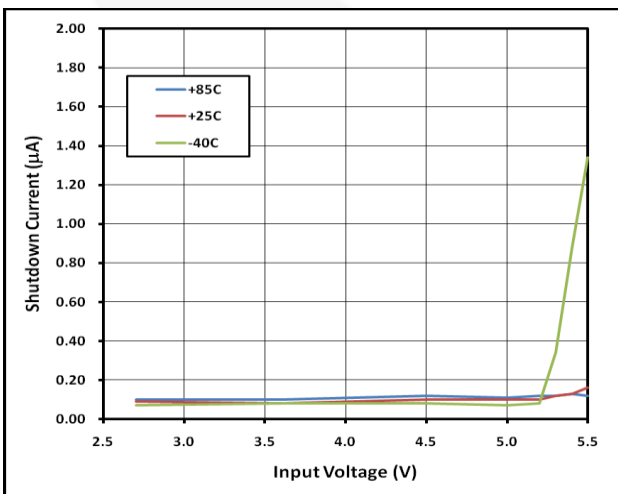


图 12.停机电流 vs.输入电压

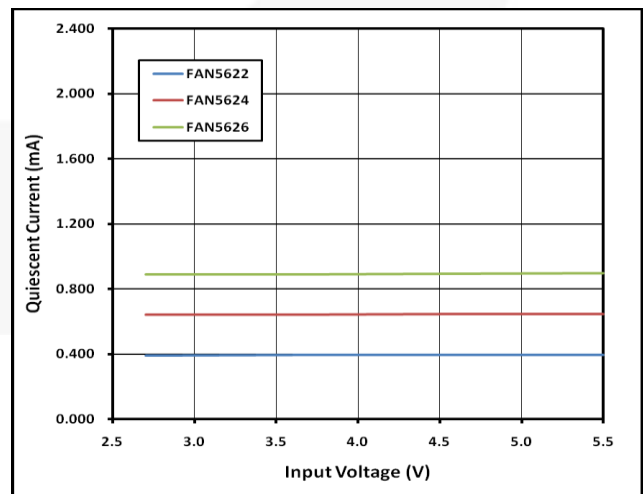


图 13.静态电流 vs.输入电压

典型性能特征

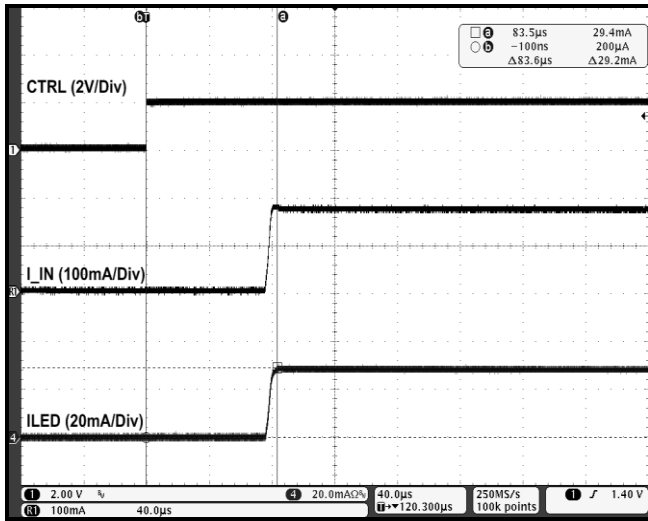


图 14.FAN5626 的启动波形

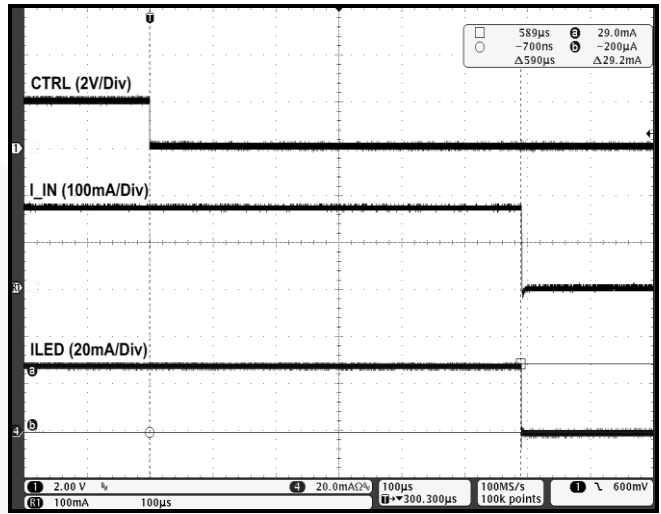


图 15.FAN5626 的关断波形

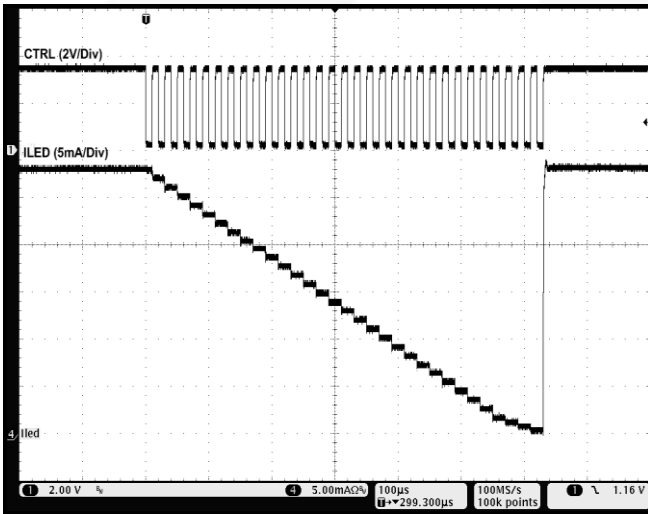


图 16.调光操作

电路说明

FAN5622、FAN5624 和 FAN5626 系列为电流阱线性 LED 驱动器，该系列芯片分别可驱动2、4 或6个LED。这三款器件使用 2.7 V 至 5.5 V 电源直接供电，所有的通道通过外部电源集成的电流阱来控制。设计采用了极低的压差，FAN562x 系列产品以接近输入电压的水平工作，无需额外的电感升压或电容开关电路。

这三款器件只需要两个额外的分立无源部件：一个 1 μ F 陶瓷输入电容和电阻(R_{SET})，用来设置 LED 的最大电流。每个电流阱输出可提供恒定电流，并以最高可达 30 mA 的电流驱动 LED。飞兆半导体的 TinyWire™ 单线数控接口，可让 LED 驱动器对LED的亮度进行32级线性调整。

设置最大电流

FAN5622、FAN5624 以及 FAN5626的最大 LED 电流使用叫做 RSET 的外接电阻来编制。三款 LED 驱动器的最大满量程 LED 电流为 30 mA，最低可达 5mA。FAN562x 系列产品也可在低于 5 mA 满量程 LED 电流下工作，但需使用一个较大的 R_{SET} 。但是，仍可确保 LED 通道的精度和匹配规格。表1显示多个满量程电流级别适用的 RSET 电阻值。

表 1.使用电阻设置最大 LED 电流

I_{LED} (mA)	R_{SET} (k Ω)
5	56.20
10	28.70
15	19.10
20	14.30
25	11.50
30	9.53

数字接口和调光控制

FAN5622、FAN5624 和 FAN5626采用简单的单线数控接口，可通过数字脉冲对LED的亮度进行32级线性调整。为了保持一定调光等级下 LED 的亮度，施加在 CTRL 引脚上的数字脉冲信号的最后一个脉冲必须保持高电平。根据所需时间保持为高电平，在此期间LED 照明为指定亮度等级。表 2 显示了调光等级，而图 17 显示如何改变调光等级。

表 2.亮度控制等级 ($R_{SET} = 19.10$ k Ω)

调光等级	电流值	I_{LED} (mA)
1	1.67%	0.25
2	3.33%	0.50
3	5.00%	0.75
4	6.67%	1.00
5	10.00%	1.50
6	13.33%	2.00
7	16.67%	2.50
8	20.00%	3.00
9	23.33%	3.50
10	26.67%	4.00
11	30.00%	4.50
12	33.33%	5.00
13	36.67%	5.50
14	40.00%	6.00
15	43.33%	6.50
16	46.67%	7.00
17	50.00%	7.50
18	53.33%	8.00
19	56.67%	8.50
20	60.00%	9.00
21	63.33%	9.50
22	66.67%	10.00
23	70.00%	10.50
24	73.33%	11.00
25	76.67%	11.50
26	80.00%	12.00
27	83.33%	12.50
28	86.67%	13.00
29	90.00%	13.50
30	93.33%	14.00
31	96.67%	14.50
32	100.00%	15.00

数字调光控制

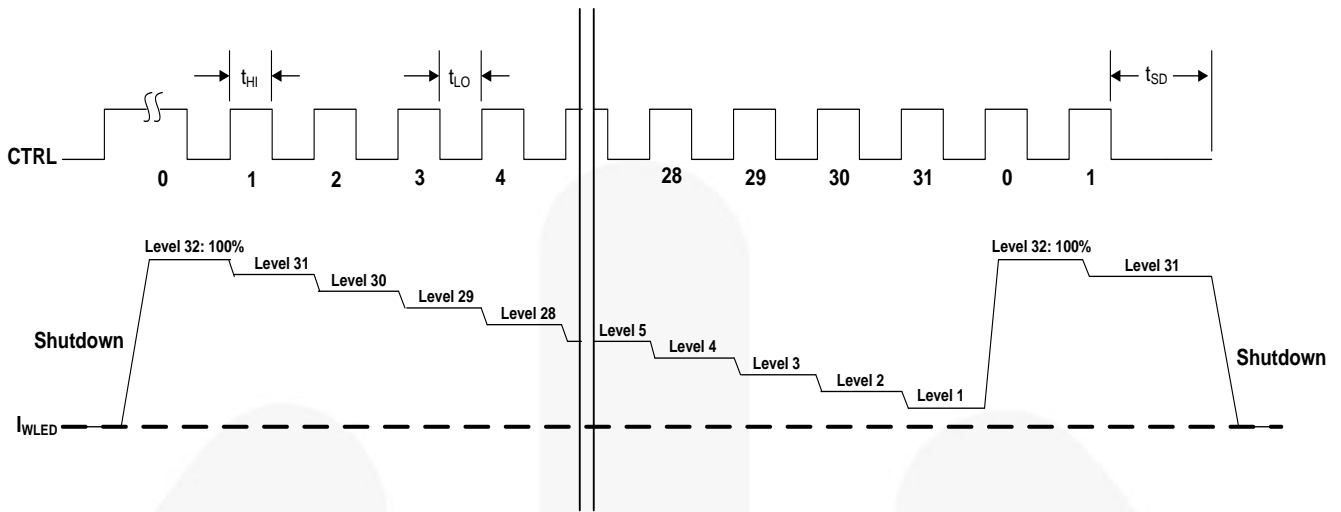


图 17.数字脉冲调光控制图

物理尺寸

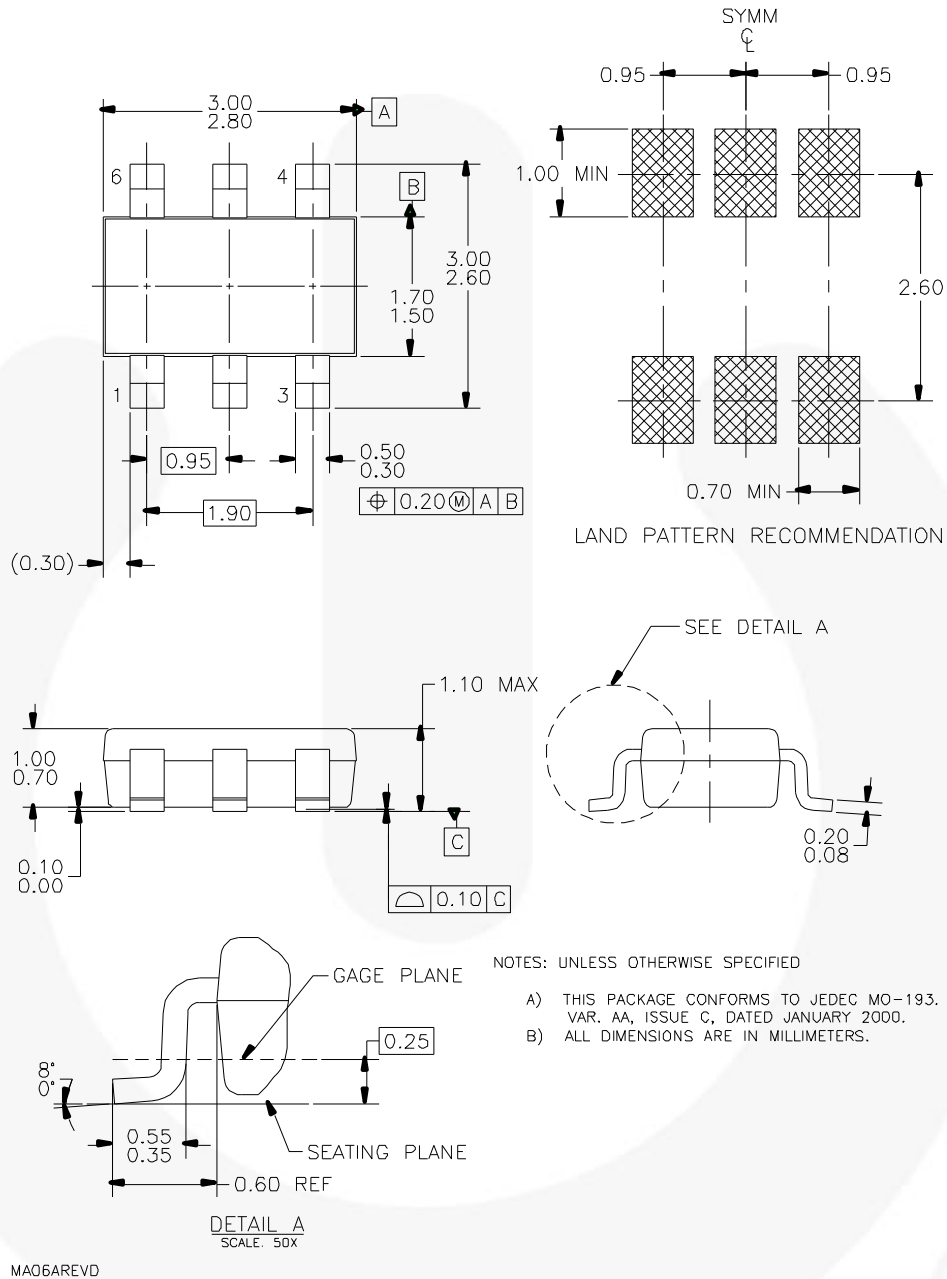


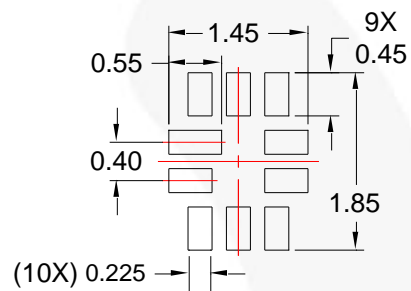
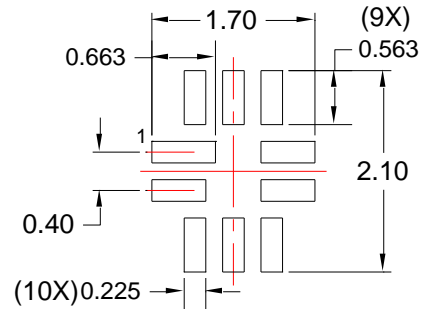
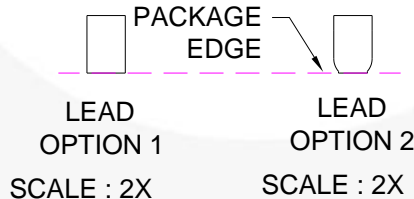
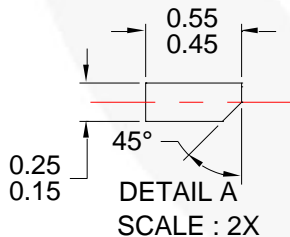
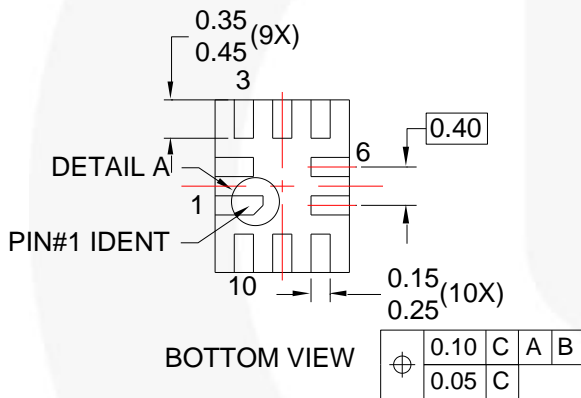
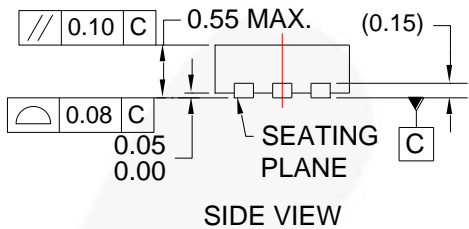
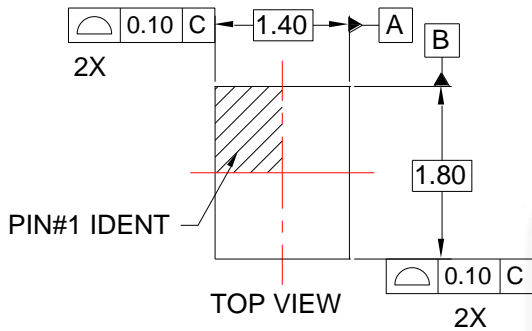
图 18.FAN5622:6-Lead SSOT23

封装图纸是作为一项服务，提供给考虑飞兆半导体产品的客户。具体参数可进行改动，且无需做出相应通知。请注意图纸上的版本和/或日期，并联系飞兆半导体代表核实或获得最新版本。封装规格并不超出飞兆公司全球范围内的条款与条件，尤其指保修，保修涉及飞兆半导体的全部产品。

随时访问飞兆半导体在线封装网页，可以获得最新的封装图：

<http://www.fairchildsemi.com/dwg/MA/MA06A.pdf>

物理尺寸(续)



NOTES:

- A. PACKAGE DOES NOT CONFORM TO ANY JEDEC STANDARD.
- B. DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.
- D. LAND PATTERN RECOMMENDATION IS BASED ON FSC DESIGN ONLY.
- E. DRAWING FILENAME: MKT-UMLP10Arev5.
- F. FAIRCHILD SEMICONDUCTOR.

图19.FAN5624:10-Lead UMLP

封装图纸是作为一项服务，提供给考虑飞兆半导体产品的客户。具体参数可进行改动，且无需做出相应通知。请注意图纸上的版本和/或日期，并联系飞兆半导体代表核实或获得最新版本。封装规格并不超出飞兆公司全球范围内的条款与条件，尤其指保修，保修涉及飞兆半导体的全部产品。

随时访问飞兆半导体在线封装网页，可以获得最新的封装图：
<http://www.fairchildsemi.com/packaging/>。

物理尺寸 (续)

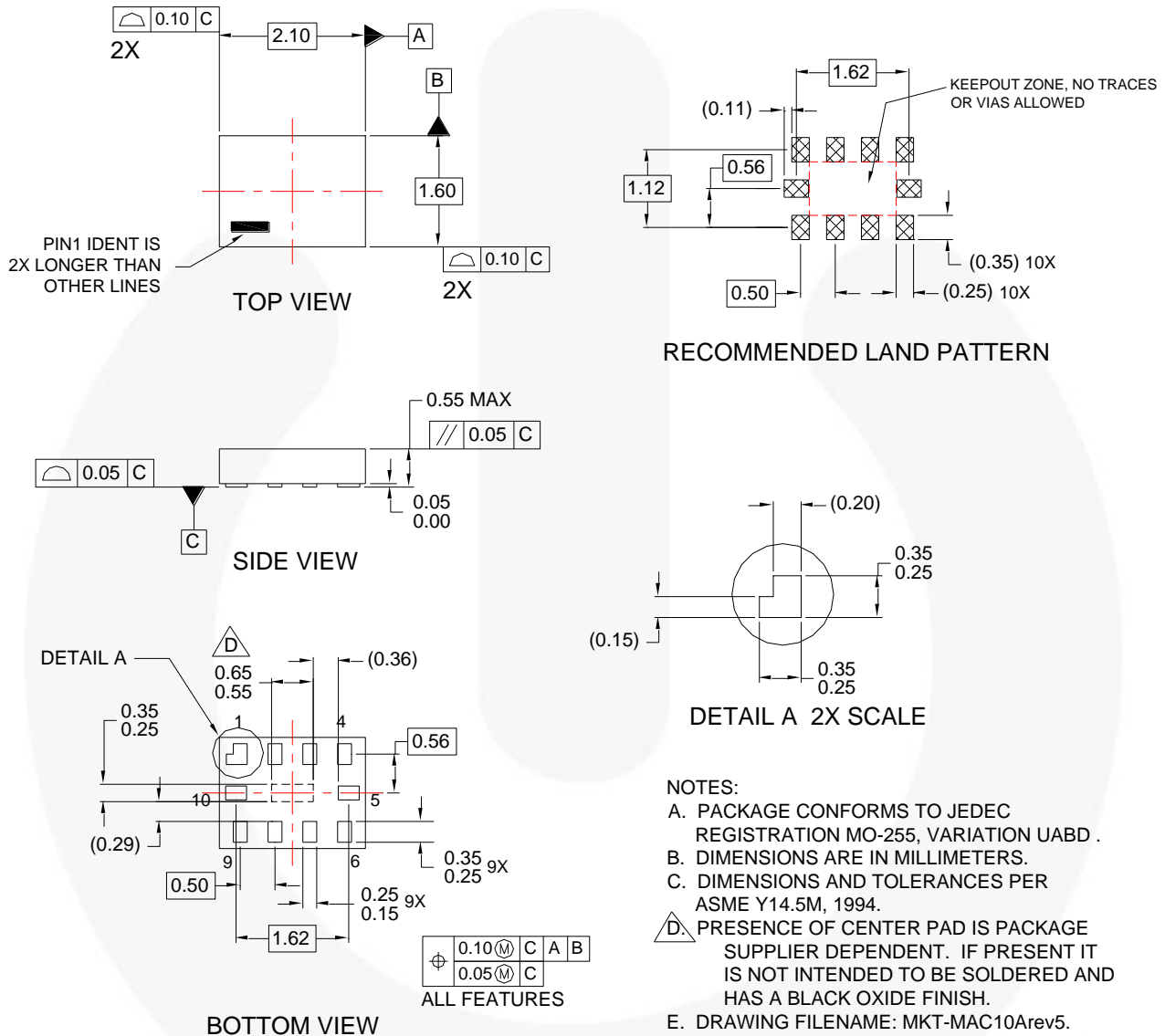


图20.FAN5626:10-Lead MicroPak™MLP

封装图纸是作为一项服务，提供给考虑飞兆半导体产品的客户。具体参数可进行改动，且无需做出相应通知。请注意图纸上的版本和/或日期，并联系飞兆半导体代表核实或获得最新版本。封装规格并不超出飞兆公司全球范围内的条款与条件，尤其指保修，保修涉及飞兆半导体的全部产品。

随时访问飞兆半导体在线封装网页，可以获得最新的封装图：
<http://www.fairchildsemi.com/packaging/>



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.

2Cool™	FPST™	 PowerTrench®	Sync-Lock™
AccuPower™	F-PFST™	PowerXS™	 SYSTEM GENERAL®
AX-CAP®	FRFET®	Programmable Active Droop™	TinyBoost™
BitSiC™	Global Power Resource™	QFET®	TinyBuck™
Build it Now™	GreenBridge™	QST™	TinyCalc™
CorePLUSTM	Green FPS™	Quiet Series™	TinyLogic®
CorePOWER™	Green FPS™ e-Series™	RapidConfigure™	TINYOPTO™
CROSSVOL™	Gmax™	 Saving our world, 1mW/W/kW at a time™	TinyPower™
CTL™	GTO™	SignalWise™	TinyPWM™
Current Transfer Logic™	IntelliMAX™	SmartMax™	TinyWire™
DEUXPEED®	ISOPLANAR™	SMART START™	TransiC™
Dual Cool™	Making Small Speakers Sound Louder and Better™	Solutions for Your Success™	TriFault Detect™
EcoSPARK®	MegaBuck™	SPM®	TRUECURRENT®
EfficientMax™	MICROCOUPLER™	STEALTH™	µSerDes™
ESBC™	MicroFET™	SuperFET®	 SerDes™
 Fairchild®	MicroPak™	SuperSOT™-3	UHC®
Fairchild Semiconductor®	MillerDrive™	SuperSOT™-6	Ultra FRFET™
FACT Quiet Series™	MotionMax™	SuperSOT™-8	UniFET™
FACT®	mWSaver™	SupreMOS®	VCM™
FAST®	OptoHiT™	SyncFET™	VisualMax™
FastvCore™	OPTOLOGIC®		VoltagePlus™
FETBench™	OPTOPLANAR®		XS™

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

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.

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, 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

Datasheet Identification	Product Status	Definition
Advance Information	Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	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.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. I64

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 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 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 nor the 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 application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, 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 Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

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