



光耦解决方案

飞兆半导体的光耦解决方案组合实现多种输入和输入配置，可降低电源功耗，有助于实现最佳抗扰性能的设计。



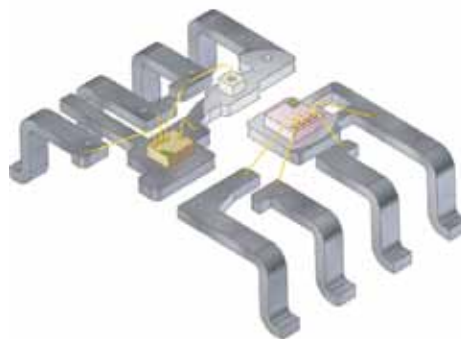
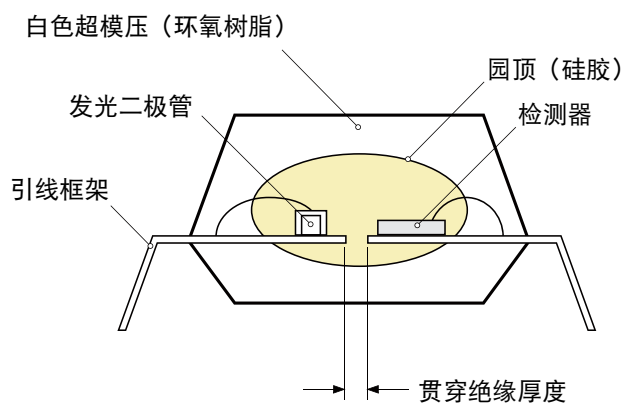
光耦



飞兆半导体是光耦产品设计与生产的领导者。能够提供范围宽广的封装平台，涵盖不同的输入与输出配置组合。可提供包括低带宽/通用开关应用的简单功能光耦、高带宽/高增益应用的高性能光耦、交流负载开关应用的高压光耦，以及其他能够提供独特性能的特殊功能光耦。

先进的共面封装技术（Optoplanar®）

飞兆半导体拥有高性能光耦的产品组合，能够提供最为理想且一流的噪声抗扰度，得益于其专利共面（coplanar）封装技术，即 Optoplanar®。Optoplanar® 技术确保了安全绝缘厚度超过 0.4mm，实现了可靠的高电压隔离，已经通过 UL1577 和 DIN EN/IEC60747-5-2 标准的认证。



新型 IGBT/MOSFET 门极驱动光耦，充实了飞兆半导体领先的离散功率 IGBT/MOSFET 产品。目前，飞兆半导体已经拥有了完整供货能力，覆盖范围涉及电路的逻辑控制部分直到功率 MOSFET 的隔离门极驱动器。

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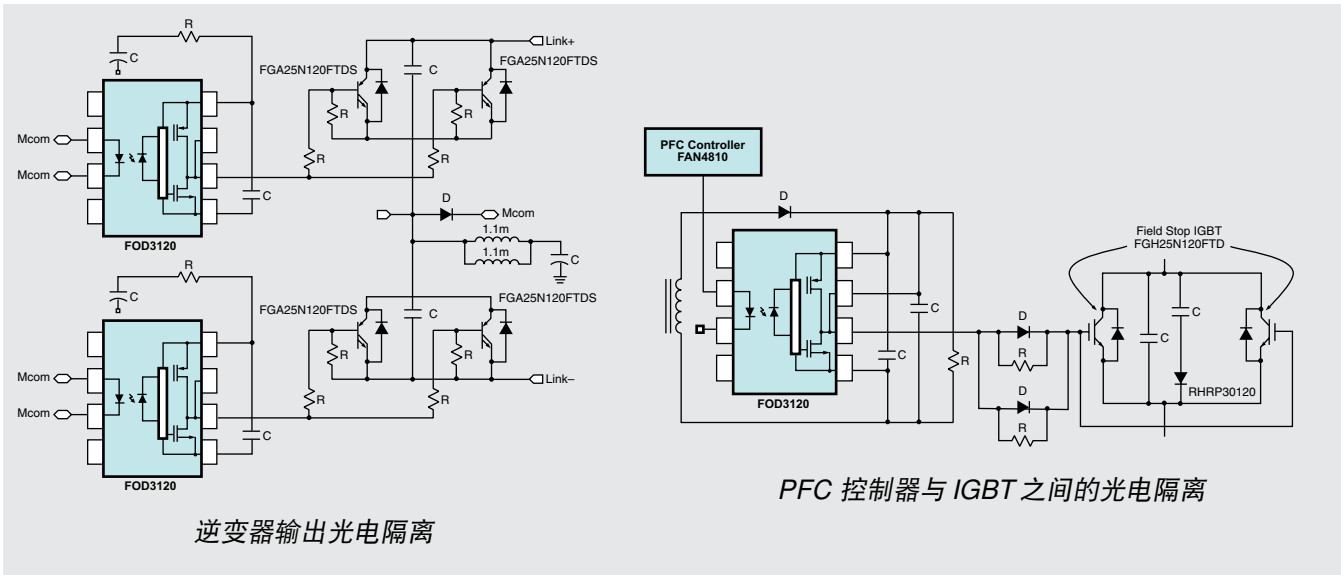
门极驱动光耦

FOD31xx 系列 IGBT/MOSFET 门极驱动光耦系列具有高速开关性能，允许设计人员采用小型滤波器，从而降低了整个系统功耗。这些高速器件可以应用于太阳能逆变器、电动机传动和感应加热应用。飞兆半导体的光耦能够提供一流的共模抑制（CMR），使得这些应用具有更强的噪声抗扰度。这些器件具有极小的脉宽失真（65ns）和优化的效率，并能提供 1414V 的峰值工作电压，满足 1200V IGBT 的开关需要。门极驱动器的输出级包含一对 PMOS 和 NMOS，有利于获得接近轨对轨的输出摆幅。该特征允许在通态和短路条件下实现对门极电压的严格控制。

这些 IGBT/MOSFET 门极驱动光耦，进一步充实了飞兆半导体离散功率 IGBT/MOSFET 产品线完善的供货能力。如今，飞兆半导体能够提供给用户一站式采购，覆盖电路的逻辑控制部分直到功率 IGBT/MOSFET 的隔离门极驱动器。这种综合解决方案能够完成 mW 级至 kW 级的变换，在电路初级与次级之间提供电气隔离。

特点与优势

- 宽工作电压范围 15V-30V，高输出电流能力高达 2.5A
- 输出级采用 P 沟道 MOSFET，允许输出电压摆幅接近电源轨（轨对轨输出）
- 最小值高达 35kV/μs 的高共模瞬态抗扰度
- 5kV 隔离电压等级，大于 8mm 爬电距离和电气间隙，可以获得 1414V（峰值）工作电压（UIORM）



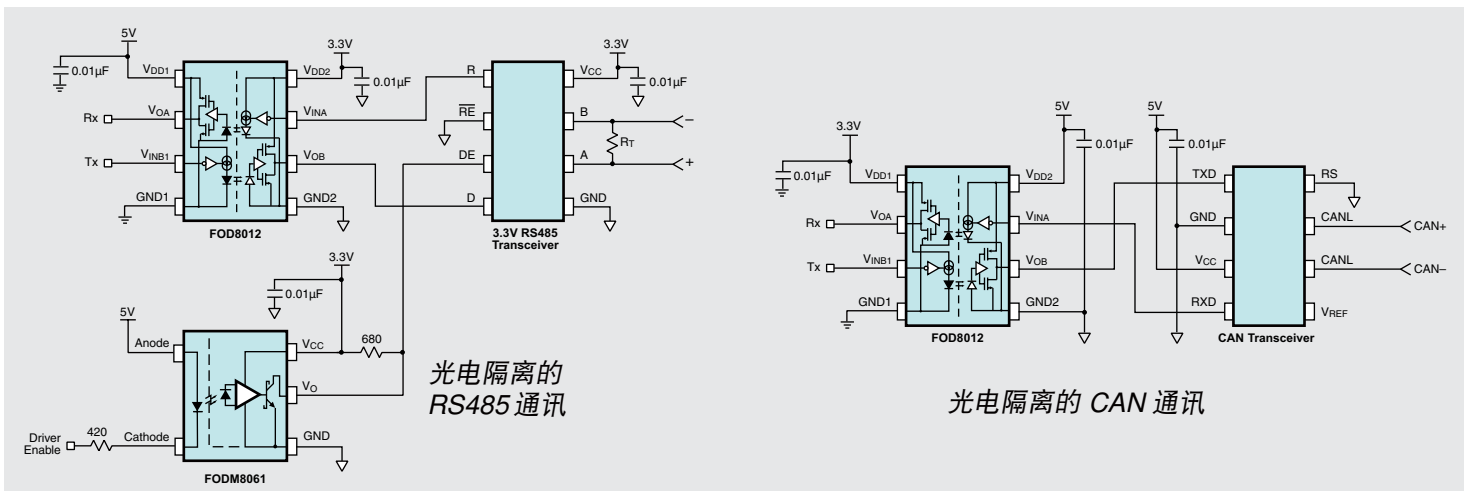
产品型号	封装	I_{OH} Min. (A)	I_{OL} Min. (A)	V_{CC} Max. (V)	I_{CC} Max. (mA)	t_{PLH}/t_{PHL} Max. (ns)	PWD Max. (ns)	V_{UVLO+} Max. (V)	V_{UVLO-} Max. (V)	CMR (kV/μs) @ V_{cm} Min. (V)	V_{ISO} AC_{RMS} (V)	T_{OPR} (°C)
FOD3120	DIP-8	2.0	2.0	30	3.8	400	100	11.5~13.5	10.0~12.0	35 @ 1,500	5000	-40 to +100
FOD3150	DIP-8	1.0	1.0	30	5.0	500	300	11.0~13.5	9.5~12.0	20 @ 1,500	5000	-40 to +100
FOD3182	DIP-8	2.0	2.0	30	5.0	210	65	7.5~9.0	7.0~8.5	35 @ 1,500	5000	-40 to +100
FOD3184	DIP-8	3.0	3.0	30	3.3	210	65	11.5~13.5	10.0~12.0	35 @ 1,500	5000	-40 to +100

3.3V/5V 高速逻辑门极光耦，能够支持没有接地回路或危险电压系统之间的隔离通信。每个高速光耦采用飞兆半导体的专利共面封装技术 Optoplanar® 和优化设计，实现了出色的噪声抗扰度，具有高共模瞬态抑制和电源噪声抑制的特点，从而可应用与嘈杂的工业环境中（100% 优于竞争对手）。

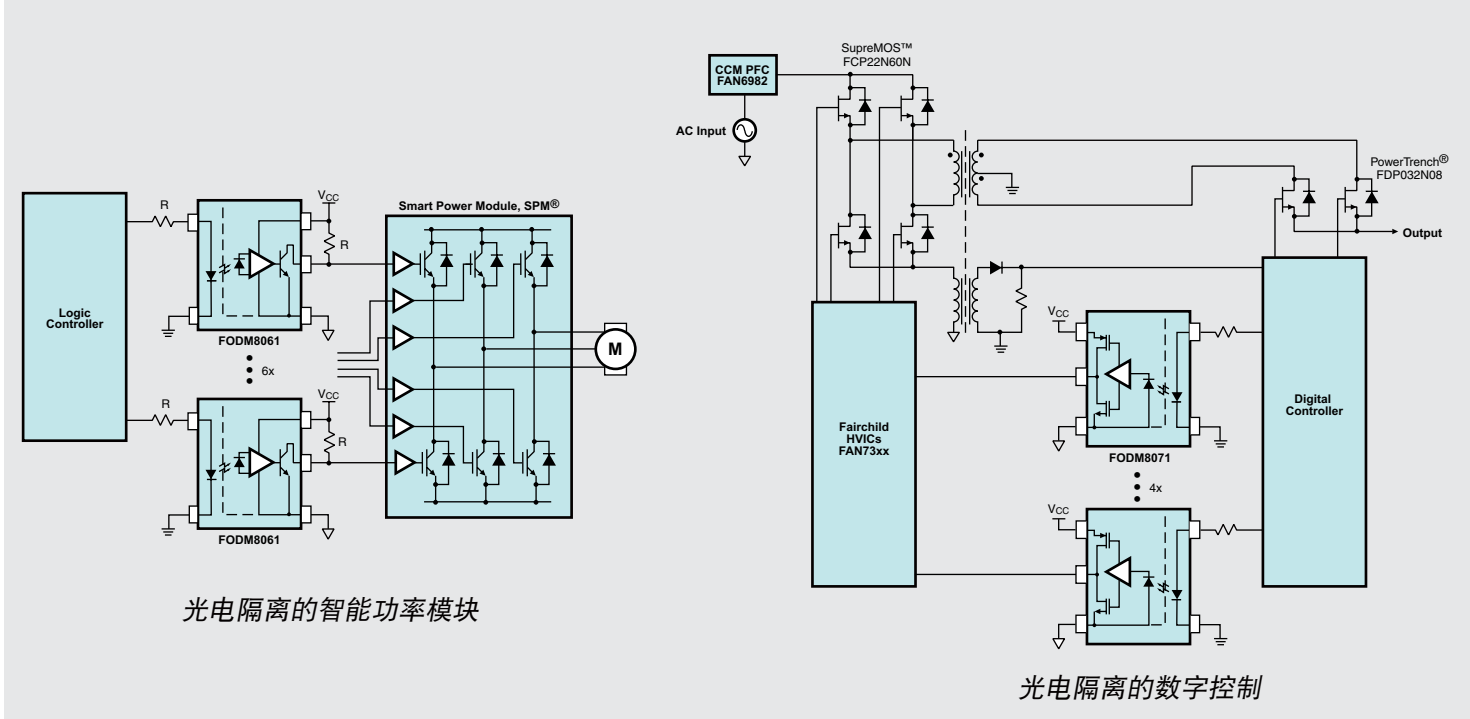
最新推出的 FOD8012 通过将可靠隔离、高度集成的两只光耦通道置于一个双向配置中，从而帮助系统工程师设计更加强健的系统，在工业系统需要的超长时间内，具有更低的传输出错率、更低的系统故障率和已经得到充分验证的可靠性，同时降低了设计与器件成本。

特点与优势

- 卓越的噪声抗扰度，包括共模瞬态抗扰度（CMTI）与电源抑制（PSR）指标
- 高达 25Mbps 的高带宽和 6ns 脉冲宽度失真
- 双电源供电，3.3V 和 5V, 支持 CMOS 和电平转换能力
- 电气特性可保证超越整个工业温度范围（-40°C 至 +110°C）
- 通过 UL1577（3,750 VACRMS 持续 1 分钟）与 DIN EN/IEC60747-5-2 认证，验证了增强可靠性



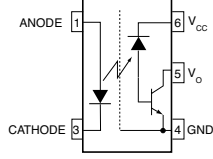
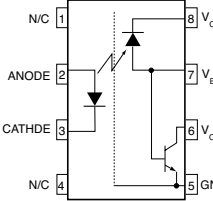
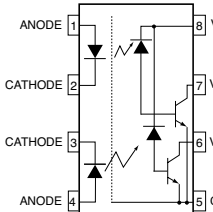
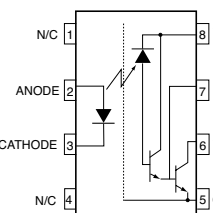
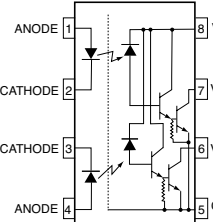
高速逻辑门极光耦



引脚连接	产品型号	封装类型	数据速率 (Mbps)	V _{DD} (V)	V _{OL} Max. (V)	I _{CCL} Max. (mA)	t _{PLH} /t _{PHL} Max. (ns)	PWD Max. (ns)	CMR Typ. (kV/μs)	V _{ISO} AC _{RMS} (V)	T _{OPR} (°C)
	FOD8012	SO-8	15	3.0–5.5	0.1	8	60	15	40	3750	–40 to +110
	FOD8001	SO-8	25	3.0–5.5	0.1	9	40	6	40	3750	–40 to +105
	FOD0721	SO-8	25	4.5–5.5	0.1	9	40	6	40	3750	–40 to +100
	FOD0720	SO-8	25	4.5–5.5	0.1	9	40	8	40	3750	–40 to +100
	FOD0710	SO-8	12.5	4.5–5.5	0.1	9	40	8	40	3750	–40 to +100

引脚连接	产品型号	封装类型	数据速率 (Mbps)	V_{CC} (V)	I_{FT} Max. (V)	V_{OL} Max. (V)	I_{CCL} Max. (mA)	t_{PLH}/t_{PHL} Max. (ns)	PWD Max. (ns)	CMR Typ. (kV/ μ s)	V_{ISO} AC RMS (V)	T_{OPR} (°C)
	FODM8071	MFP (SO-5)	20	3.0-5.5	5	0.1	4.8	55	20	40	3750	-40 to +110
	FODM8061	MFP (SO-5)	10	3.0-5.5	5	0.6	8.5	85	25	40	3750	-40 to +110
	FODM611	MFP (SO-5)	10	4.5-5.5	5	0.6	10	100	35	40	3750	-40 to +85
	FOD060L	SO-8	10	3.0-5.5	5	0.6	10	90	25	50	3750	-40 to +85
	HCPL0600	SO-8	10	4.5-5.5	5	0.6	13	100	35	-	3750	-40 to +85
	HCPL0601	SO-8	10	4.5-5.5	5	0.6	13	100	35	10	3750	-40 to +85
	HCPL0611	SO-8	10	4.5-5.5	5	0.6	13	100	35	20	3750	-40 to +85
	FOD260L	DIP-8	10	3.0-5.5	5	0.6	10	90	25	50	5000	-40 to +85
	6N137M	DIP-8	10	4.5-5.5	5	0.6	13	100	35	10	5000	-40 to +85
	HCPL2601M	DIP-8	10	4.5-5.5	5	0.6	13	100	35	10	5000	-40 to +85
	HCPL2611M	DIP-8	10	4.5-5.5	5	0.6	13	100	35	15	5000	-40 to +85
	HCPL062N	SO-8	10	3.0-5.5	5	0.6	15	90	25	50	3750	-40 to +85
	HCPL0637	SO-8	10	4.5-5.5	5	0.6	21	100	35	-	3750	-40 to +85
	HCPL0638	SO-8	10	4.5-5.5	5	0.6	21	100	35	15	3750	-40 to +85
	HCPL0639	SO-8	10	4.5-5.5	5	0.6	21	100	35	30	3750	-40 to +85
	HCPL2630M	DIP-8	10	4.5-5.5	5	0.6	21	100	35	10	5000	-40 to +85
	HCPL2631M	DIP-8	10	4.5-5.5	5	0.6	21	100	35	10	5000	-40 to +85
	H11N1M	DIP-6	5	4.0-15.0	3.2	0.5	10	330	-	-	4200	-40 to +85
	H11N2M	DIP-6	5	4.0-15.0	5	0.5	10	330	-	-	4200	-40 to +85
	H11L1M	DIP-6	1	3.0-15.0	1.6	0.4	5	4000	-	-	4200	-40 to +85
	H11L2M	DIP-6	1	3.0-15.0	10	0.4	5	4000	-	-	4200	-40 to +85
	H11L3M	DIP-6	1	3.0-15.0	5	0.4	5	4000	-	-	4200	-40 to +85
	FOD2200	DIP-8	2.5	4.5-20.0	1.6	0.5	6	300	-	10	5000	-40 to +85

高性能晶体管

引脚连接	产品型号	封装类型	数据速率 (Mbps)	V _{CC} Typ. (V)	电流传输率		V _{OL} Max. (V)	I _{CC} Max. (mA)	t _{PHL} Max. (μs)	t _{PLH} Max. (μs)	CMR (kV/μs)	V _{ISO} AC _{RMS} (V)	T _{OPR} (°C)
					Min.	Max.							
	FODM452	MFP-5 (SO-5)	1	4.5 to 5.5	20	50	0.4	0.2	0.8	0.8	15	3750	-40 to +85
	FODM453 ⁽¹⁾	MFP-5 (SO-5)	1	4.5 to 5.5	20	50	0.4	0.2	0.8	0.8	40	3750	-40 to +85
	FOD050L	SO-8	1	3.0 to 5.5	15	50	0.3	0.2	2.0	2.0	35	2500	-40 to +85
	HCPL0500	SO-8	1	4.5 to 5.5	7	50	0.4	0.2	1.5	1.5	10	2500	-40 to +85
	HCPL0501	SO-8	1	4.5 to 5.5	19	50	0.4	0.2	0.8	0.8	10	2500	-40 to +85
	HCPL0453 ^(1,2)	SO-8	1	4.5 to 5.5	19	50	0.4	0.2	0.8	0.8	40	2500	-40 to +85
	FOD250L	DIP-8	1	3.0 to 5.5	15	50	0.3	0.2	2.0	2.0	35	5000	-40 to +85
	6N135M	DIP-8	1	4.5 to 5.5	7	50	0.4	0.2	1.5	1.5	10	5000	-40 to +100
	6N136M	DIP-8	1	4.5 to 5.5	19	50	0.4	0.2	0.8	0.8	10	5000	-40 to +100
	HCPL4503M ^(1,2)	DIP-8	1	4.5 to 5.5	19	50	0.5	0.2	0.8	0.8	30	5000	-40 to +100
	FOD053L	SO-8	1	3.0 to 5.5	15	50	0.3	0.4	2.0	2.0	35	2500	-40 to +85
	HCPL0530	SO-8	1	4.5 to 5.5	7	50	0.5	0.4	1.5	1.5	10	2500	-40 to +85
	HCPL0531	SO-8	1	4.5 to 5.5	19	50	0.4	0.4	0.8	0.8	10	2500	-40 to +85
	HCPL0534 ⁽¹⁾	SO-8	1	4.5 to 5.5	19	50	0.4	0.4	0.8	0.8	40	2500	-40 to +85
	HCPL2530M	DIP-8	1	4.5 to 5.5	7	50	0.5	0.4	1.5	1.5	10	5000	-40 to +100
	HCPL2531M	DIP-8	1	4.5 to 5.5	19	50	0.5	0.4	0.8	0.8	10	5000	-40 to +100
	HCPL0700	SO-8	0.1	4.5 to 5.5	300	2600	0.4	1.5	10	35	10	2500	-40 to +85
	HCPL0701	SO-8	0.1	4.5 to 15.0	500	2600	0.4	1.5	10	35	10	2500	-40 to +85
	6N138M	DIP-8	0.1	4.5 to 5.5	300	-	0.4	1.5	10	35	10	5000	-40 to +100
	6N139M	DIP-8	0.1	4.5 to 15.0	500	-	0.4	1.5	10	35	10	5000	-40 to +100
	FOD073L	SO-8	0.1	3.0 to 5.5	400	7000	0.3	3	30	90	10	2500	-40 to +85
	HCPL0730	SO-8	0.1	4.5 to 5.5	300	5000	0.4	3	20	35	10	2500	-40 to +85
	HCPL0731	SO-8	0.1	4.5 to 15.0	500	5000	0.4	3	20	35	10	2500	-40 to +85
	HCPL2730M	DIP-8	0.1	4.5 to 5.5	300	-	0.4	3	20	35	10	5000	-40 to +100
	HCPL2731M	DIP-8	0.1	4.5 to 15.0	500	-	0.4	3	20	35	10	5000	-40 to +100

¹ 建议用于 IPM 驱动

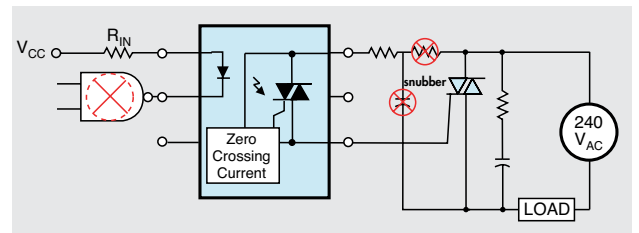
² 未连接底座

无需缓冲 TRIAC 驱动光耦

无需缓冲器的 TRIAC 驱动光耦，其特点是内置有源 dv/dt 箝位电路，在同类产品中，能够提供 $10,000V/\mu s$ (dv/dt) 的最佳噪声抑制能力，优于 TRIAC 单片驱动器的平均水平 ($1500V/\mu s$)。该优越性能消除了低 dv/dt 的单片 TRIAC 驱动光耦所需的 RC 缓冲网络。可以节省宝贵的设计时间，减少了用料 (BOMs)。这些产品能够为隔离固态继电器、交流电动机和照明镇流器等提供了一个更加可靠的解决方案，具有很强的抗干扰性能，非常适合环境恶劣的工业应用场合。FOD41XX 系列器件集成了过零抑制电路，可以防止器件在接近交流电源电压峰值时开通。FOD42XX 系列具有随机相位的特性，允许器件在任一交流电源电压处开通。

特点与优势

- 高静态和换相 dv/dt 抗扰度 (最小 $10kV/\mu s$)，无需缓冲电路
- 最小 800V 的高阻断电压
- 最大 1.3mA 的低输入电流，降低了功耗
- 消除缓冲电路，待机功率得到显著降低
- 最小 $5000V_{AC_{RMS}}$ 的高隔离电压，持续1分钟
- 最大通态额定电流高达 300mA
- 无铅且符合 RoHS 标准
- 取得UL, C-UL 与 IEC60747-5-2批准



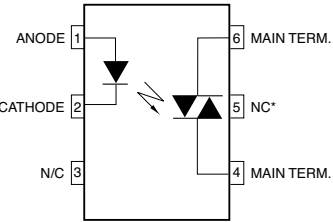
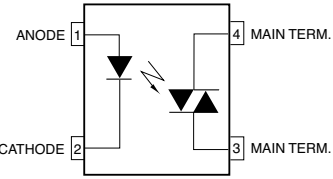
过零 Triac 驱动光耦

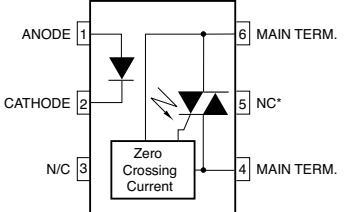
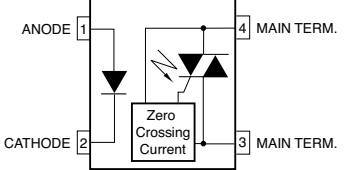
引脚连接和封装类型	产品型号	V_{DRM} Min. (V)	I_{FT} Max. (mA)	V_{TM} Max. (V)	dv/dt Min. (V/ μs)	I_H Typ. (μA)	V_{INH} Max. (V)	I_{DRM} Max. (nA)	V_{ISO} AC_{RMS} (V)	T_{OPR} ($^{\circ}C$)
	FOD410	600	2	3	10000	200	25	100	5000	-55 to +100
	FOD4116	600	1.3	3	10000	200	25	100	5000	-55 to +100
	FOD4108	800	2	3	10000	200	25	100	5000	-55 to +100
	FOD4118	800	1.3	3	10000	200	25	100	5000	-55 to +100

随机相位 Triac 驱动光耦

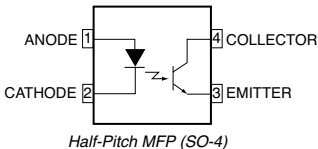
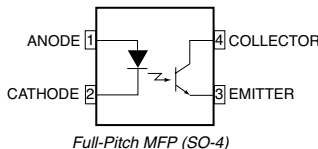
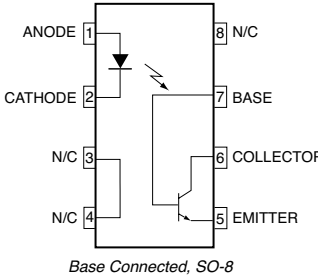
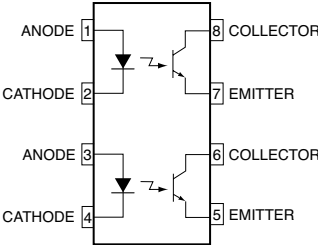
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	FOD420	600	2	3	10000	200	100	5000	-55 to +100
	FOD4216	600	1.3	3	10000	200	100	5000	-55 to +100
	FOD4208	800	2	3	10000	200	100	5000	-55 to +100
	FOD4218	800	1.3	3	10000	200	100	5000	-55 to +100

随机相位 TRIAC 驱动光耦

引脚连接	产品型号	V_{DRM} Min. (V)	I_{FT} Max. (V)	V_{TM} Max. (V)	dv/dt Min. (V/ μ s)	I_H Typ. (μ s)	I_{DRM} Typ. (nA)	V_{ISO} AC RMS (V)	T_{OPR} (°C)
DIP-6 封装的 TRIAC 驱动									
	MOC3010M	250	15	3	—	100	100	4200	−40 to +85
	MOC3011M	250	10	3	—	100	100	4200	−40 to +85
	MOC3012M	250	5	3	—	100	100	4200	−40 to +85
	MOC3020M	400	30	3	—	100	100	4200	−40 to +85
	MOC3021M	400	15	3	—	100	100	4200	−40 to +85
	MOC3022M	400	10	3	—	100	100	4200	−40 to +85
	MOC3023M	400	5	3	—	100	100	4200	−40 to +85
	MOC3051M	600	15	2.5	1000	280	100	4200	−40 to +85
	MOC3052M	600	10	2.5	1000	280	100	4200	−40 to +85
标准 0.1" 间距 MFP (SO-4) 封装的 TRIAC 驱动									
	FODM3011	250	10	3	—	300	100	3750	−40 to +110
	FODM3012	250	5	3	—	300	100	3750	−40 to +110
	FODM3022	400	10	3	—	300	100	3750	−40 to +110
	FODM3023	400	5	3	—	300	100	3750	−40 to +110
	FODM3052	600	10	3	1000	300	100	3750	−40 to +110
	FODM3053	600	5	3	1000	300	100	3750	−40 to +110

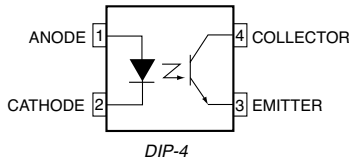
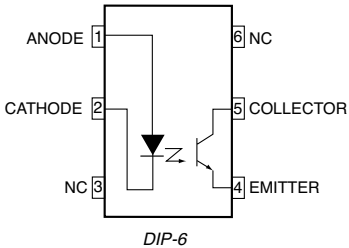
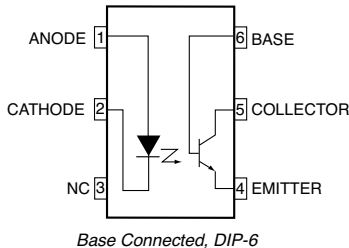
引脚连接	产品型号	V_{DRM} Min. (V)	I_{FT} Max. (V)	V_{TM} Max. (V)	dv/dt Min. (V/ μ s)	I_H Typ. (μ s)	V_{INH} Max. (V)	I_{DRM} Typ. (nA)	V_{ISO} AC_{RMS} (V)	T_{OPR} (°C)
DIP-6 封装的 TRIAC 驱动										
	MOC3031M	250	15	3	1000	400	20	100	4200	-40 to +85
	MOC3032M	250	10	3	1000	400	20	100	4200	-40 to +85
	MOC3033M	250	5	3	1000	400	20	100	4200	-40 to +85
	MOC3041M	400	15	3	1000	400	20	100	4200	-40 to +85
	MOC3042M	400	10	3	1000	400	20	100	4200	-40 to +85
	MOC3043M	400	5	3	1000	400	20	100	4200	-40 to +85
	MOC3061M	600	15	3	600	500	20	500	4200	-40 to +85
	MOC3062M	600	10	3	600	500	20	500	4200	-40 to +85
	MOC3063M	600	5	3	600	500	20	500	4200	-40 to +85
	MOC3162M	600	10	3	1000	500	15	100	4200	-40 to +85
	MOC3163M	600	5	3	1000	500	15	100	4200	-40 to +85
	MOC3081M	800	15	3	600	500	20	500	4200	-40 to +85
	MOC3082M	800	10	3	600	500	20	500	4200	-40 to +85
	MOC3083M	800	5	3	600	500	20	500	4200	-40 to +85
标准 0.1" 间距 MFP (SO-4) 封装的 TRIAC 驱动										
	FODM3062	600	10	3	600	300	20	500	3750	-40 to +110
	FODM3063	600	5	3	600	300	20	500	3750	-40 to +110
	FODM3082	800	10	3	600	300	20	500	3750	-40 to +110
	FODM3083	800	5	3	600	300	20	500	3750	-40 to +110

光电晶体管输出，DC 检测输入

引脚连接和封装类型	产品型号	CTR (%)			BV _{CEO} Min. (V)	t _{ON} Typ. (μs)	t _{OFF} Typ. (μs)	V _{ISO} AC _{RMS} (V)	T _{OPR} (°C)
		Min.	Max.	I _F (mA), V _{CE} (V)					
 Half-Pitch MFP (SO-4)	HMHA2801*	80	600	5, 5	80	–	–	3750	–55 to +100
	HMHA281	50	600	5, 5	80	–	–	3750	–55 to +100
 Full-Pitch MFP (SO-4)	FODM121*	50	600	5, 5	80	–	–	3750	–40 to +110
	FODM124	100	1200	1, 0.5	80	–	–	3750	–40 to +110
	FODM2701*	50	300	5, 5	40	–	–	3750	–40 to +110
 Base Connected, SO-8	MOC205M	40	80	10, 10	70	7.5	5.7	2500	–40 to +100
	MOC206M	63	125	10, 10	70	7.5	5.7	2500	–40 to +100
	MOC207M	100	200	10, 10	70	7.5	5.7	2500	–40 to +100
	MOC211M	20	–	10, 10	30	7.5	5.7	2500	–40 to +100
	MOC212M	50	–	10, 10	30	7.5	5.7	2500	–40 to +100
	MOC213M	100	–	10, 10	30	7.5	5.7	2500	–40 to +100
	MOC216M	50	–	1, 5	30	4	4	2500	–40 to +100
	MOC217M	100	–	1, 5	30	4	4	2500	–40 to +100
 Dual-Channel, SO-8	MOCD207M	100	200	10, 5	70	3	2.8	2500	–40 to +100
	MOCD208M	40	125	10, 5	70	3	2.8	2500	–40 to +100
	MOCD211M	20	–	10, 10	30	7.5	5.7	2500	–40 to +100
	MOCD213M	100	–	10, 10	70	3	2.8	2500	–40 to +100
	MOCD217M	100	–	1, 5	30	7.5	5.7	2500	–40 to +100

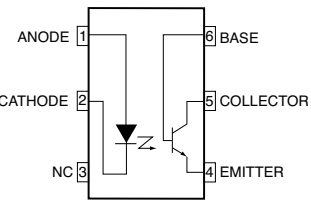
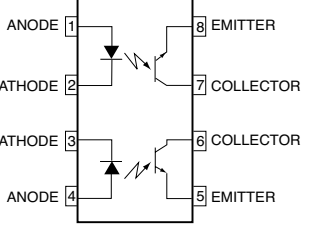
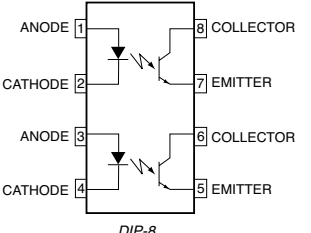
* 提供 CTR 选择

光电晶体管输出，DC 检测输入（续）

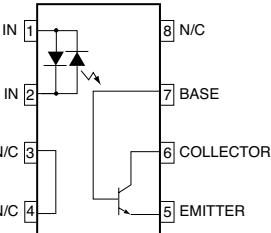
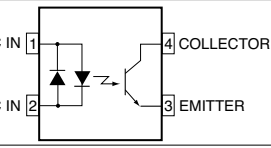
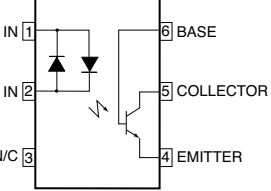
引脚连接和 封装类型	产品型号	CTR (%)			BV _{CEO} Min. (V)	t _{ON} Typ. (μs)	t _{OFF} Typ. (μs)	V _{ISO AC} RMS (V)	T _{OPR} (°C)
		Min.	Max.	I _F (mA), V _{CE} (V)					
 DIP-4	FOD817*	50	600	5, 5	70	–	–	5000	–55 to +110
 DIP-6	CNY17F1M	40	80	10, 5	70	2	3	4200	–40 to +100
	CNY17F2M	63	125	10, 5	70	2	3	4200	–40 to +100
	CNY17F3M	100	200	10, 5	70	2	3	4200	–40 to +100
	CNY17F4M	160	320	10, 5	70	2	3	4200	–40 to +100
	MOC8106M	50	150	10, 10	70	2	3	4200	–40 to +100
 Base Connected, DIP-6	MCT5201M	120	–	–	30	3	12	4200	–40 to +100
	MCT5210M	70	–	3, 5	30	7	8	4200	–40 to +100
	MCT5211M	150	–	1.6, 5	30	15	11	4200	–40 to +100
	4N25M	20	–	10, 10	30	2	2	4200	–40 to +100
	4N26M	20	–	10, 10	30	2	2	4200	–40 to +100
	4N27M	10	–	10, 10	30	2	2	4200	–40 to +100
	4N28M	10	–	10, 10	30	2	2	4200	–40 to +100
	4N35M	100	–	10, 10	30	2	2	4200	–40 to +100
	4N36M	100	–	10, 10	30	2	2	4200	–40 to +100
	4N37M	100	–	10, 10	30	2	2	4200	–40 to +100
	H11A1M	50	–	–	30	2	2	4200	–40 to +100
	H11A2M	20	–	10, 10	30	2	2	4200	–40 to +100
	H11A3M	20	–	10, 10	30	2	2	4200	–40 to +100
	H11A4M	10	–	10, 10	30	2	2	4200	–40 to +100
	H11A5M	30	–	10, 10	30	2	2	4200	–40 to +100
	MCT2EM	20	–	10, 10	30	2	2	4200	–40 to +100
	MOC8100M	50	–	1, 5	30	20*	20*	4200	–40 to +100
	TIL111M	–	–	–	30	–	–	4200	–40 to +100
	TIL117M	50	–	10, 10	30	10*	10*	4200	–40 to +100
	H11AG1M	300	–	1, 5	30	5	5	4200	–40 to +100
	CNY171M	40	80	10, 5	70	2	3	4200	–40 to +100
	CNY172M	63	125	10, 5	70	2	3	4200	–40 to +100
	CNY173M	100	200	10, 5	70	2	3	4200	–40 to +100
	CNY174M	160	320	10, 5	70	2	3	4200	–40 to +100
	H11AV1M	100	300	10, 10	70	15*	15*	4200	–40 to +100

* 最大值

光电晶体管输出，DC 检测输入（续）

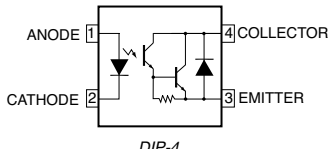
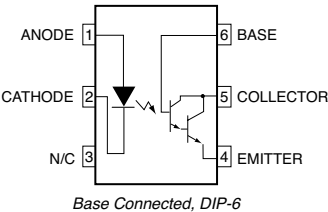
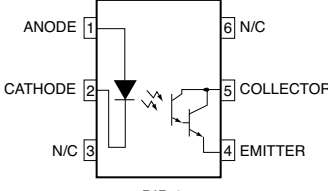
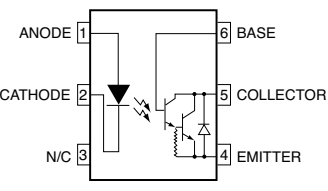
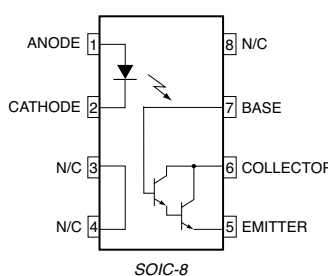
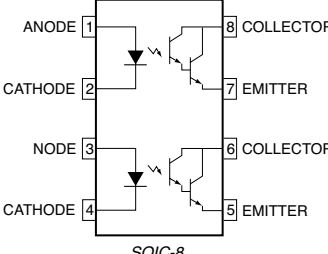
引脚连接和封装类型	产品型号	CTR (%)			BV _{CEO} Min. (V)	t _{ON} Typ. (μs)	t _{OFF} Typ. (μs)	V _{ISO} AC _{RMS} (V)	T _{OPR} (°C)
		Min.	Max.	I _F (mA), V _{CE} (V)					
 High Voltage, DIP-6	4N38M	20	–	10, 10	80	5	5	4200	–40 to +100
	H11D1M	20	–	10, 10	300	5	5	4200	–40 to +100
	H11D3M	20	–	10, 10	200	5	5	4200	–40 to +100
	MOC8204M	20	–	10, 10	400	5	5	4200	–40 to +100
 DIP-8	MCT6	20	–	10, 10	30	2.4	2.4	5300	–55 to +100
	MCT61	50	–	5, 5	30	2.4	2.4	5300	–55 to +100
	MCT62	100	–	5, 5	30	2.4	2.4	5300	–55 to +100
 DIP-8	MCT9001	50	600	5, 5	55	3	3	5300	–55 to +100

光电晶体管输出，AC 检测输入

引脚连接和封装类型	产品型号	封装类型	CTR (%)			BV _{CEO} Min. (V)	t _R Typ. (μs)	t _F Typ. (μs)	V _{ISO} AC _{RMS} (V)	T _{OPR} (°C)
			Min.	Max.	I _F (mA), V _{CE} (V)					
	MOC256M	SO-8	20	–	±10, 10	30	–	–	2500	–40 to +100
	HMHAA280	Half-Pitch MFP (SO4)	50	600	±5, 5	80	3	3	3750	–55 to +100
	FODM2705	Full-Pitch MFP (SO4)	50	300	±5, 5	40	3	3	3750	–40 to +110
	FOD814*	DIP-4	20	300	±1, 5	70	4	3	5000	–55 to +105
	H11AA1M	DIP-6	20	–	±10, 10	30	–	–	4200	–40 to +100
	H11AA2M	DIP-6	10	–	±10, 10	30	–	–	4200	–40 to +100
	H11AA3M	DIP-6	50	–	±10, 10	30	–	–	4200	–40 to +100
	H11AA4M	DIP-6	100	–	±10, 10	30	–	–	4200	–40 to +100

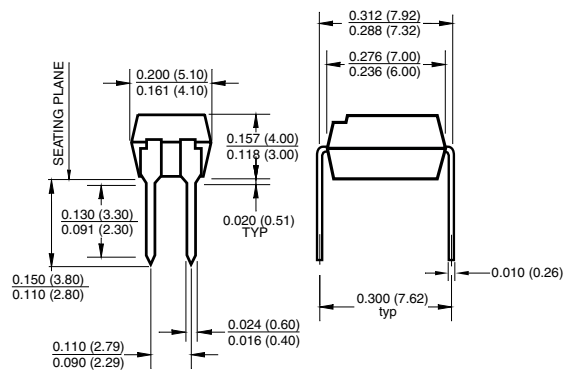
* 提供 CTR 选择

光电达林顿管输出

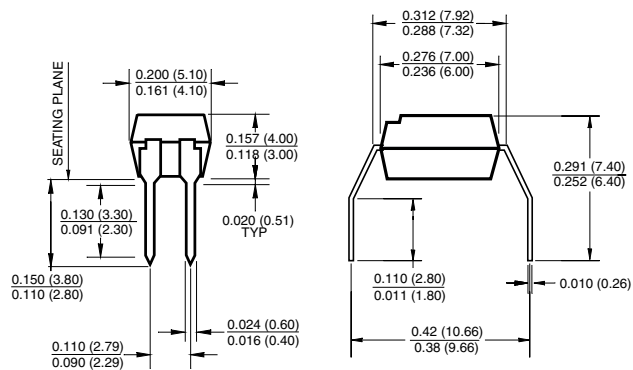
引脚连接和 封装类型	产品型号	CTR (%)			BV_{CEO} Min. (V)	t_{ON} Typ. (μs)	t_{OFF} Typ. (μs)	$V_{ISO AC_{RMS}}$ (V)	T_{OPR} ($^{\circ}C$)
		Min.	Max.	I_F (mA), V_{CE} (V)					
 DIP-4	FOD852	1000	15000	1, 2	300	–	–	5000	–30 to +100
 Base Connected, DIP-6	4N29M	100	–	10, 10	30	5*	40*	5300	–40 to +100
	4N30M	100	–	10, 10	30	5*	40*	5300	–40 to +100
	4N32M	500	–	10, 10	30	5*	100*	5300	–40 to +100
	4N33M	500	–	10, 10	30	5*	100*	5300	–40 to +100
	H11B1M	500	–	1, 5	25	25	18	5300	–40 to +100
	TIL113M	300	–	10, 1	30	5*	100*	5300	–40 to +100
 DIP-6	MOC8021M	1000	–	10, 5	50	8.5	95	5300	–40 to +110
	MOC8050M	500	–	10, 1.5	80	8.5	95	5300	–40 to +110
 DIP-6	H11G1M	500	–	1, 5	100	5	100	5300	–40 to +100
	H11G2M	500	–	1, 5	80	5	100	5300	–40 to +100
 SOIC-8	MOC223M	500	–	1, 5	30	10	0.125	2500	–40 to +100
 SOIC-8	MOC223M	500	–	1, 5	30	8	55	2500	–40 to +100

* 最大值

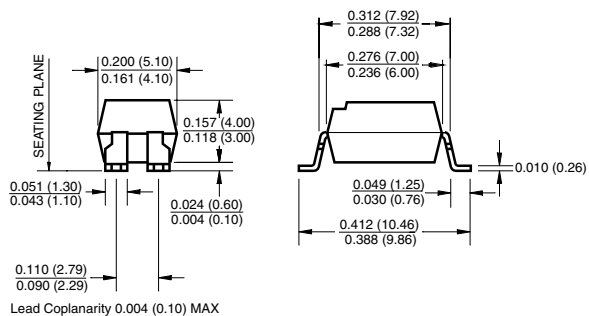
通孔



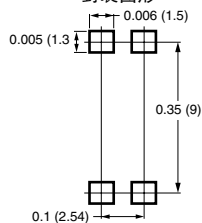
0.4" 引线间距 (选项 T)



表面安装 (选项 S)



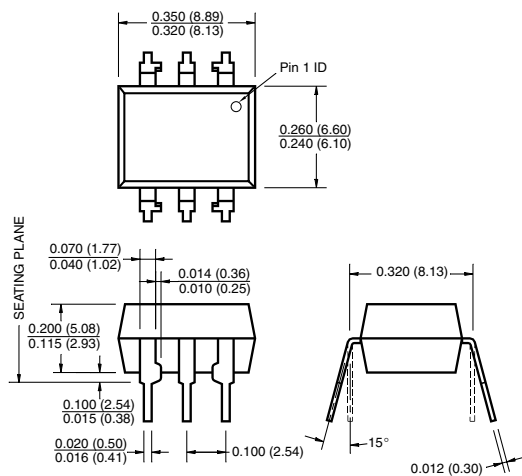
封装图形



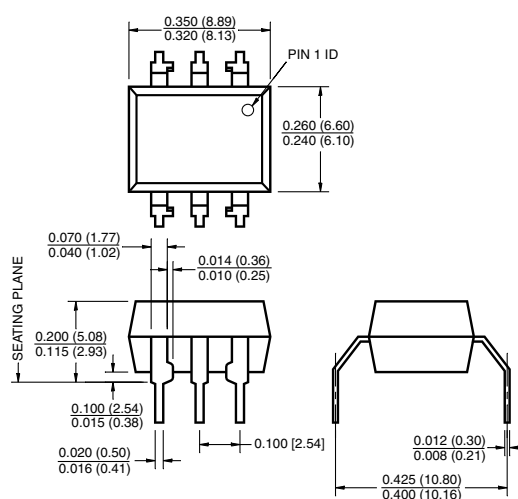
4 引脚 DIP

注:
所有尺寸的单位为英寸 (毫米)

通孔

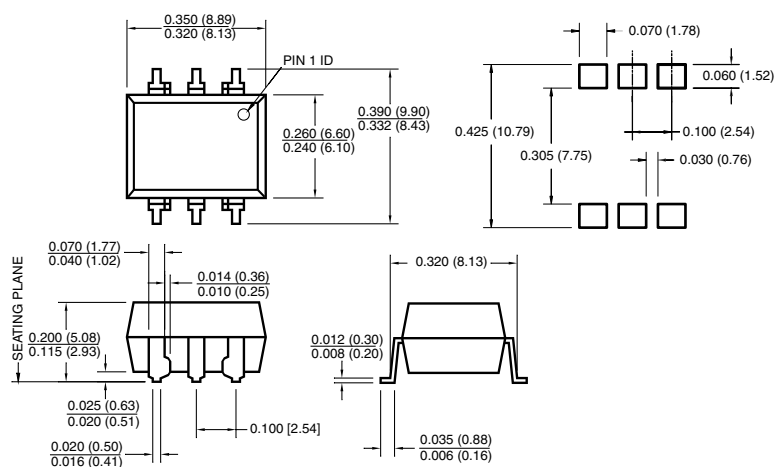


0.4" 引线间距 (选项 T)



表面安装 (选项 S)

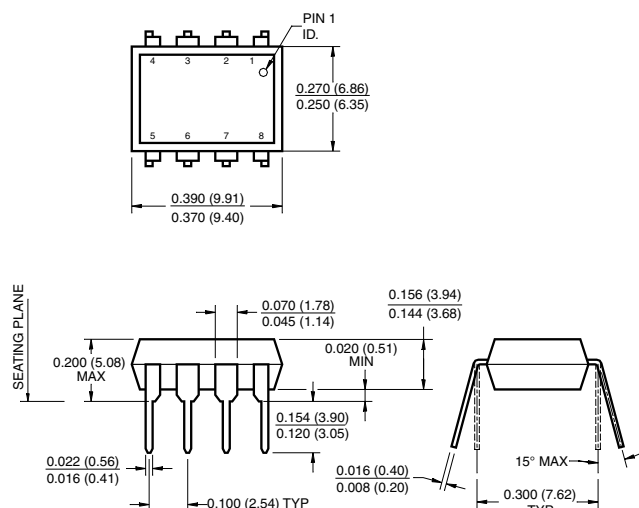
LAND PATTERN



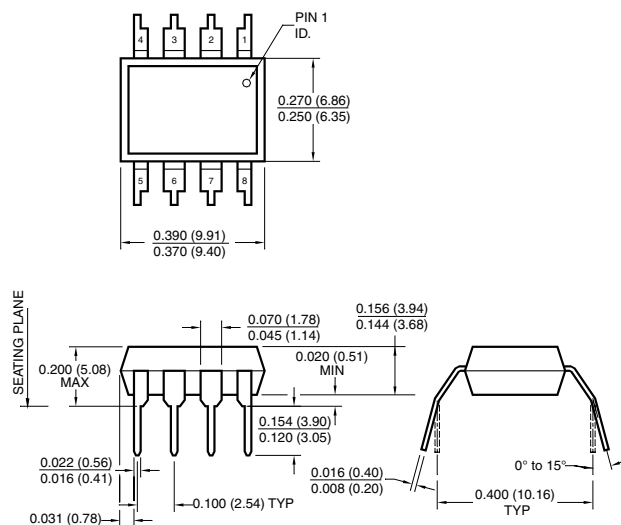
6 引脚 DIP

注：
所有尺寸的单位为英寸（毫米）

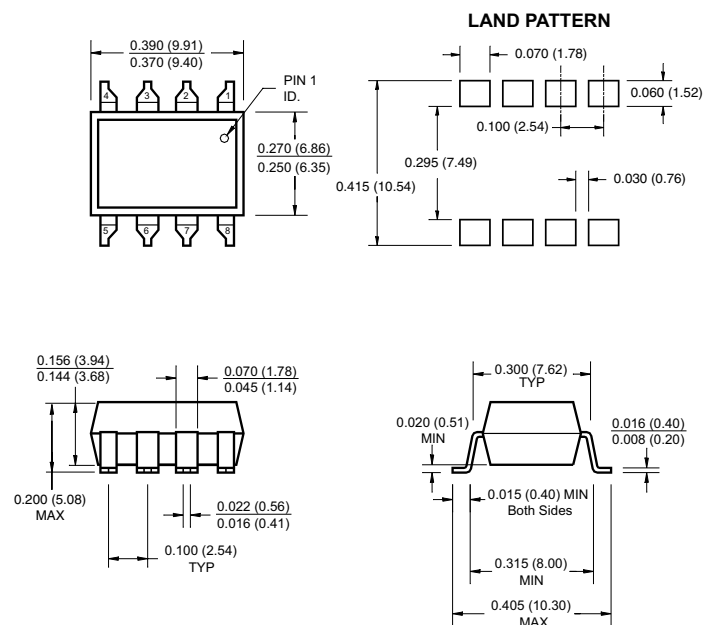
通孔



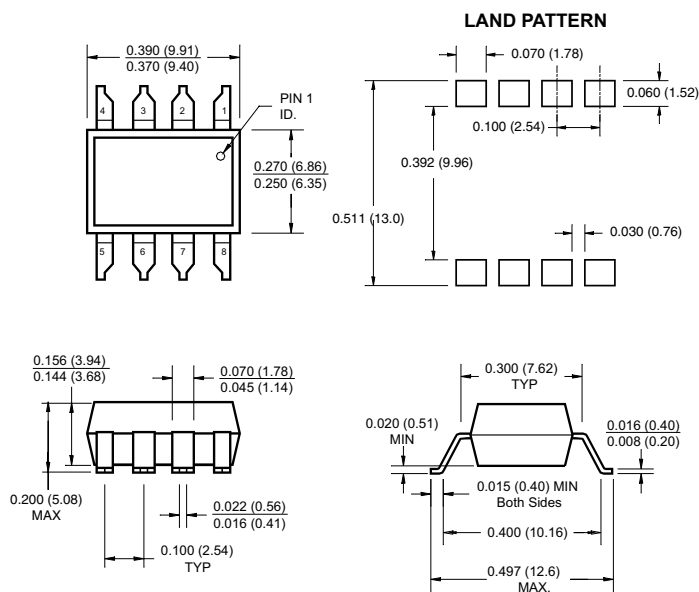
0.4" 引线间距 (选项 T)



表面安装 - 0.3" 引线间距 (选项 S)



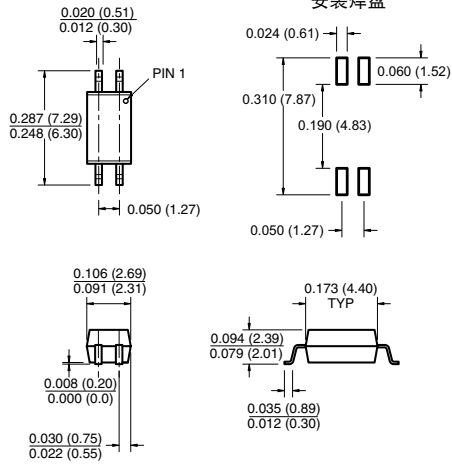
表面安装 - 0.4" 引线间距 (选项 TS)



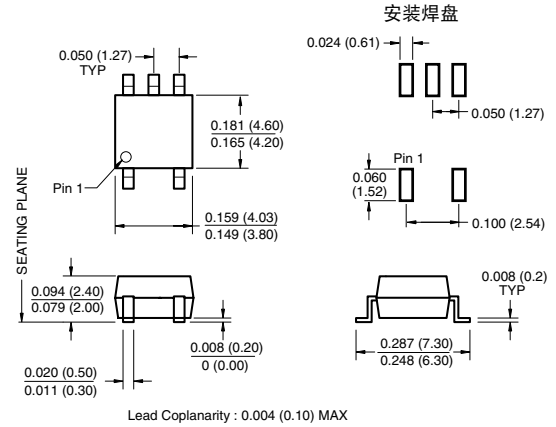
8 引脚 DIP

注:
所有尺寸的单位为英寸 (毫米)

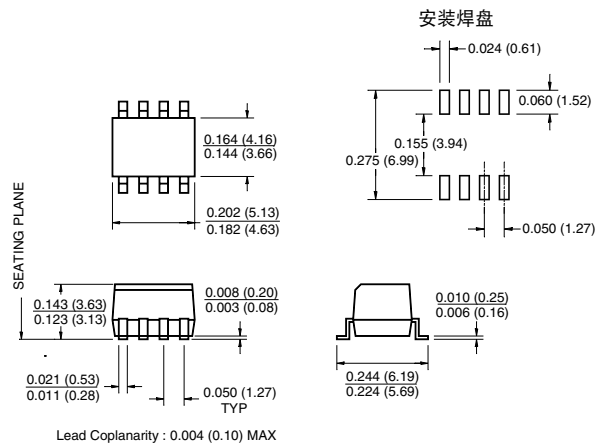
SO4



SO4/SO5



SO8



轮廓略图

注：
所有尺寸的单位为英寸（毫米）

有关数据表、使用说明书、样品及其他信息, 请访问: www.fairchildsemi.com

PRODUCTS & SAMPLES

APPLICATIONS

DESIGN SUPPORT

COMPANY

POWER MANAGEMENT ICs

AC-DC: Power Factor Correction

- Continuous Conduction Mode (CCM) PFC Controllers
- Critical (CrCM) / Boundary Conduction Mode (BCM) PFC Controllers
- PFC + PWM Combination (Combo) Controllers
- Interleaved PFC Controllers

Isolated DC-DC

- Green-mode PWM Controllers
- Integrated Green-mode PWM Regulators (Green FPS™)
- Integrated PWM Regulators (FPS™)
- Primary-side only CV/CC Controllers
- Standard SMPS PWM Controllers
- Synchronous Rectifier Controllers

Non-Isolated DC-DC

- Charge-pump Converters
- Multi-phase Controllers
- Step-down Controllers (External Switch)
- Step-down Regulators (Integrated Switch)
- Step-up Regulators (Integrated Switch)

Power Drivers

- High Voltage Gate Drivers (HVIC)
- Low-side Gate Drivers
- Synchronous Rectifier Controllers/Drivers
- Synchronous-Buck/Multi-phase Drivers

Supervisory/Monitor ICs

- Ground Fault Interrupt (GFI) Controllers
- Supervisors + PWM
- Temperature Sensors
- Voltage Supervisors/Detectors/Stabilizers

Voltage Regulators

- LDOs
- Positive Voltage Linear Regulators
- Negative Voltage Linear Regulators
- Shunt Regulators

POWER SEMICONDUCTORS

Diodes & Rectifiers

- Bridge Rectifiers
- Rectifiers
- Schottky Diodes and Rectifiers
- Small Signal Diodes
- Transient Voltage Suppressors
- Zener Diodes

IGBTs

- Discrete IGBTs
- Ignition IGBTs

Integrated Power Solutions

- DrMOS FET Plus Driver Multi-chip Modules
- Full Function Load Switches (IntelliMAX™)
- MOSFET/Schottky Combos
- Motion-(SPM®) Smart Power Modules
- PDP-(SPM®) Smart Power Modules
- PFC-(SPM®) Smart Power Modules
- Power-(SPM®) Smart Power Modules
- Smart Switches

MOSFETs

- Discrete MOSFETs
- Full Function Load Switches (IntelliMAX™)
- MOSFET/Schottky Combos

Transistors

- BJTs
- Discrete IGBTs
- JFETs
- Load Switches
- Discrete MOSFETs
- MOSFET/Schottky Combos
- Small Signal Transistors

LIGHTING AND DISPLAY

- CCFL Ballast ICs
- CFL/Lighting Ballast Control ICs
- Critical (CrCM)/Boundary Conduction Mode (BCM) PFC Controllers for Lighting
- High Voltage Gate Drivers (HVICs)
- LED Drivers
- PDP Smart Power Modules (PDP-SPM™)

SIGNAL PATH ICs

Amplifiers & Comparators

- Comparators
- Current Sense Amplifiers
- High Performance Amplifiers (>15MHz)
- Operational Amplifiers

Battery Protection ICs

- Battery Protection ICs

Interface

- LVDS
- Serializers/Deserializers (µSerDes™)
- USB Transceivers

Signal Conditioning

- Triple Video DACs
- Video Filter Drivers
- Video Switch Matrix/Multiplexers

Switches

- Analog/Audio Switches
- Bus Switches
- Camera Switches
- Multimedia Switches
- USB Switches
- Video Switches

AUTOMOTIVE PRODUCTS

- Automotive Power Modules
- Discrete Power
- Intelligent Power

LOGIC | TINYLOGIC®

- Buffers, Drivers, Transceivers
- Flip Flops, Latches, Registers
- Gates
- MSI Functions
- Multiplexer/Demultiplexer Encoders/Decoders
- Specialty Logic
- TinyLogic
- Voltage Level Translators

OPTOELECTRONICS

- Infrared
- High Performance Optocouplers
- TRIAC Driver Optocouplers
- Phototransistor Optocouplers
- Solid State Relay Optocouplers