

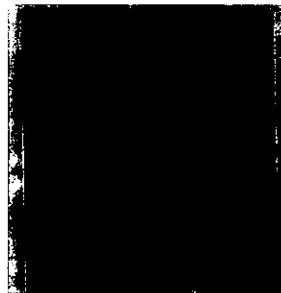
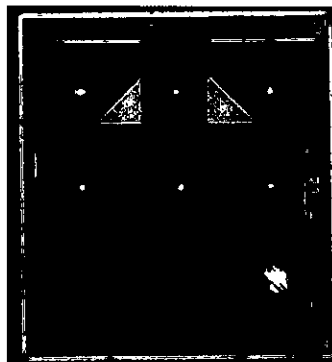
Factory location

supplier	Headquarter area (Which Country)	Part Number					
TI	United States	DRV2624YFFR	Shipping& Warehouse	PDC	TI PDC	Singapore	Singapore city
			Test	Test	TI Clark	Philippines	Clark
			Assembly	Assembly	TI Clark	Philippines	Clark
			Level4 name	Level4 name description	Level4 supplier name	Level4 Country/area	Level4 location (City)
			wafer	FAB	TI RFAB	United States	Richardson

Terminal component supplier form.

2. 器件基本信息 Device Base Information		
序号 No.	认证项目 Qualification items	反馈结果或附件 Feedback or attachment
1	器件资料中的型号 Device Part Number in Datasheet / Specification	DRV2624YFFR
2	器件订货型号 Device Ordering Part Number (Tape&Reel packaging)	DRV2624YFFR
3	器件的状态 (工程样品、小批量、量产) Device status (engineering sample, small-lot or mass production)	Mass production
4	该器件推出市场时间? When was the device issued?	2015.Dec
5	该器件量产时间, 或计划量产时间 What's the date of mass production or when does it plan to start mass production?	2015.Dec
6	该器件过去3个月平均每月出货量是多少? How many units did you ship out per month on average in past 3 months?	>1M
7	该器件预计市场寿命有多少年? 预计停产时间? What is the estimated life cycle for this device? What is the time of estimated EOL?	NO EOL plan
8	该器件是否符合贵司的产品路标? Does this device follow your company's device development roadmap?	YES
9	同行业中该器件的市场份额是多少? What is the market share of this device?	Can't provide
10	该类器件的竞争对手有哪些? Who are the competitors of this device?	Can't provide
11	该器件的应用还有哪些客户 Who is the other customer for this device?	Can't provide
12	贵司是否获得该器件的所有知识产权使用权限 Do you have the IP (Intellectual Property) and associated license for using this device?	YES

13	该器件ECCN(Export Control Classification Number)是多少?(针对美国\欧洲\日本\香港供应商) What is the ECCN(Export Control Classification Number)(Only for Supplier from U.S.A/EU/Japan/Hongkong)	EAR99
14	该器件是ENC/Restricted还是ENC/Unrestricted? (针对来自美国供应商并且ECCN特点为“XX002”的器件) Is it encryption of ENC/Restricted or ENC/Unrestricted?(Only for Supplier from U.S.A and Component's ECCN like XX002)	
15	该器件是否需要出口许可证(针对中国民用用户)? Do you have the export license for this device?(For China Civil Use)	
17	器件工艺节点(如: Si CMOS 32nm工艺) Wafer Process /Technology Node	0.18UM
18	该器件是否通过了可靠性认证测试。 Has this device passed all the reliability and qualification tests?	YES
19	该器件是否为潮敏器件? 是的话其潮湿敏感等级是多少? Is it a moisture sensitive device? If it is, what's the MSL?	MSL1
20	如果是静电敏感器件, 器件能承受的ESD电压是多少伏? (需填写具体电压值) If it is ESD sensitive device, what is the ESD protection voltage?	HBM:1500V CDM:500V
21	器件工作温度范围是多少? What is the range of operating temperature for this device?	-40 ~ 85C
22	是否符合ROHS指令? Does it comply with ROHS directive?	YES
23	是否无铅? Is it lead free?	YES
25	是否无卤? Is it halogen free?	YES

25	器件封装类型（如QFN、BGA等） The device package types (such as QFN, BGA etc.)	WSCP
26	器件尺寸（长*宽*高） The device size (Length * Width * Height)	1.508x1.371x.318mm
27	器件净重（KG） Net weight of the chip (KG)	2.2mg
28	器件正面照片 Top photo with marking	
29	器件背面照片 Bottom photo with package outline	

Marking

customer item (客户编码)	vendor Name (供应商名称)	Part No. (器件型号)	Marking Rule (丝印规则)
39080353	TI	DRV2624YFFR	丝印2624代表型号，通过识别本体丝印2624可判定

Topside Symbol

: WCSP(1270-1459)X(1100+)

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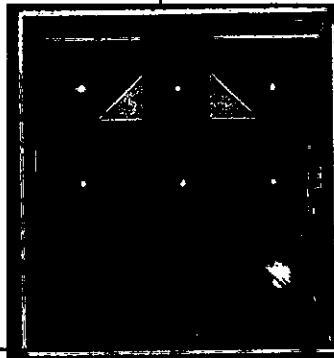
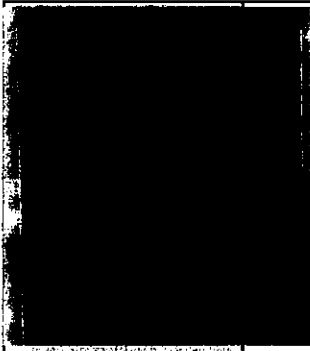
+-----+
|  YMS  |
|  2624  |
|  LLLL  |
+-----+

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YM = YEAR MONTH DATE CODE
S  = ASSEMBLY SITE CODE PER QSS 005-120-
LLLL = ASSY LOT CODE

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Reliability information

类别 Category	需求项目 Requirement Items	供应商反馈 Vendor's Feedback
基本信息 General Information	供应商名称 Supplier Name	TI
	器件型号 Device Part Number	DRV2624YFFR
晶圆信息 Wafer related Information	晶圆代工厂信息, 工艺类别和工艺节点 Wafer fab information, process type and node	RFAB 0.18UM LBC8
	芯片尺寸 (长*宽*高) Die Size (Length*Width*Height)	1.508x1.371x.318mm
	复杂度: To get failure rate per SR332 Complexity (transistor or gate number): To get failure rate per SR332	NA
	该晶圆工艺已经使用多长时间 Number of year/months since this wafer process was qualified and released to production.	> 5 YEARS
	有多少个产品已经使用了该晶圆工艺 How many of your products have been applied with this wafer process?	>50
	客户已使用的同晶圆族器件 (同工艺技术、同工厂) Is there any part from the same wafer process family have been used in customer? If yes, please list the part number.	YES
	晶圆工艺制程能力 (SPC) Wafer Process Capability(SPC)	CPK>1.67
	是否存在Cpk<1.33的制程监控参数? 如有, 请列出该监控参数及其改进计划。 Is there any wafer process CPK<1.33? If yes, please list it and provide the improvement plan.	NO
	芯片ID Chip ID:Do you have chip ID or die ID for this device?	NO
	封装代工厂, 封装类型 Assembly Factory, Package type	CLARK WLCSP
	封装尺寸 (长*宽*高) Package Size (Length*Width*Height)	1.508x1.371x.318mm
	焊球/引脚间距 Ball/Lead pitch	0.4MM
	客户已使用的同封装族器件 (同封装技术、同封装厂) Is there any part from the same package family have been used in customer? If yes, please list the part number.	YES
	划片工艺 Wafer cutting method	Mechanical saw (step cut)

封装信息
Assembly related
Information

键合工艺 Wire Bonding (Only for Wire Bonding Package)	键合线成分 Wire composition	NA
	键合线直径 Wire diameter	NA
BGA基板工艺信息 Substrate Information (Only for BGA package)	基板供应商 Substrate vendor	NA
	基板工艺 Substrate technology	NA
	基板金属层数 Substrate metal layers	NA
BGA倒装内焊球制作工艺 Flip Chip Bumping, for BGA package (Only for Flipchip Package)	内焊球供应商 Bumping vendor	NA
	内焊球工艺 Bumping Technology	NA
	内焊球材料成分 Bump material composition	NA
	内焊球直径和间距 Bump diameter,Bump pitch	NA
	内焊球的空洞指标 The Specification/criteria of bump void	NA
	焊球电迁移测试结果 Bump Electromigration test result, required for SnPb bump only	NA
BGA倒装底部填充工艺 Flip Chip Underfill, for BGA package (Only for Flipchip Package)	Underfill材料型号, Tg温度(玻璃化转变温度) Underfill Part Number, The glass transition temperature of Underfill	NA
	底部填充的空洞指标 The Specification/criteria of underfill void	NA
封装工艺制程能力 (SPC) Assembly Process Capability(SPC)		CPK $\geq$ 1.67
是否存在Cpk<1.33的制程监控参数? 如有, 请列出该监控参数及其改进计划。 Is there any assembly process CPK<1.33? If yes, please list it and provide the improvement plan.		NO
工作寿命 Operating Lifetime at max Tj		yes
非易失存储器擦写次数 Nonvolatile memory erase times		N/A

器件基本规格 General Specification	工作温度范围 Range of Operation Temperature (Ta, Tj or Tc)		-40~85C
	存储温度范围 Storage Temperature range		-65 ~ 150C
	存储期限 Storage limit		2years
	最大结温 Max.Junctioin Temperature		150
	最大功耗 Max. Power Dissipation		
	早期失效率 EFR, Early Failure Rate, FIT		10FIT
	长期失效率 IFR, Intrinsic Failure Rate, FIT		0.1FIT@60%CL
	器件反复上下电次数规格 The number of power cycle which component can endure		NA
	潮湿敏感等级 MSL, Moisture Sensitive Level		MSL 1
	封装热阻 Theta ja, jc and jb	Qja	107
		Qjc	0.9
		Qjb	18.1
	ESD (HBM、CDM, for all pin)	HBM	1500
		CDM	500
	抗闩锁能力 Latch-Up (At max. Ambient Temperature)		YES
软失效相关 Soft Error related	RAM大小 RAM size		NA
	软失效率(SER, 仅限于有RAM结构器件) Soft Error Rate, Only for RAM & Flip Flop structure device	with ECC	NA
		without ECC	NA
	是否使用超低α放射性的晶圆和封装材料，如果不是，请列出各种辐射材料及其辐射强度 Does ultra-low-alpha (<0.002 cph/cm2) material have been used? If No, pls list the emission material and its emmission rate(counts per hour per cm^2). [Only for RAM & Flip Flop structure device]		NA
	Test Factory		CLARK
			YES
			YES

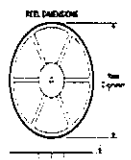
测试相关 Testing related	电测试故障覆盖率(For Stuck at, Transition fault, Path-delay fault respectively)	YES
	ATE fault coverage rate(For Stuck at, Transition fault, Path-delay fault respectively)	YES
		YES
	漏电流测试门限 leakage test limits	Can't provide
机械应力相关 Mechanical stress related	短期机械压力规格 Transient compressive load limit: To measure of BGA crushing potential or die crack potential;	MEET REQUIREMENT
	长期机械压力规格 static compressive load force limit: To measure of BGA crushing potential or die crack potential;	MEET REQUIREMENT
	短期弯曲应变规格 Short-term Bending Strain (ue)	MEET REQUIREMENT
	长期弯曲应变规格 Long-term Bending Strain (ue)	MEET REQUIREMENT
	三点弯 Three dot bend (Only For WLCSP)	MEET REQUIREMENT
	盖子扭力 lid torque limit (Only for Lid Package)	NA
	盖子拉力 lid pull limit (Only for Lid Package)	NA
	表面粘接能力 TIM adhesive strength	NA
	新工艺或新设计器件的可靠性或寿命极限测试数据 If the chip is new process or new design, And some Lifetime limit test(Test to fail or beyond JEDEC standard) had been down. Please specify the test condition and result detailly.	NO
	晶圆可靠性认证报告 Wafer reliability Qualification Report, including: TDDDB, HCI, NBTI, PBTI, EM, SM .etc	YES
	封装可靠性认证报告 Package Qualification Report including: DC, THB, HAST, UHAST	YES
		YES
		YES
		YES
		YES

可靠性认证 Reliability Qualification	Package Qualification report, including: PC, THB, HAST, UHAST, HTSL, TC, BLTC, DT, Bend, PDT, PVT .etc	YES
		YES
		N/A
		N/A
		N/A
	器件可靠性认证报告 Device Qualification Report, including: ELFR, HTOL, LTOL, ASER, SSER, ESD-HBM, ESD-CDM, LU .etc	YES
		YES
		N/A
		N/A
		N/A
		YES
		YES
		YES
	器件量产应该进行可靠性试验监控，请提供最新的可靠性监控报告 The device should be done reliability monitoring. Please provide the latest Reliability Monitoring Report, including: PC, THB, HAST, UHAST, TC, HTSL, HTOL .etc	YES
	含RAM结构的器件的软失效认证报告 Soft Error Qualification Report (Only for RAM & Flip Flop structure device)	N/A
	性能报告 Characterization report, follow JESD86	Can't provide
建议或要求 The suggestion and requirement	对客户应用的建议或要求（质量和可靠性维度） The suggestion and requirement to customer (From Quality and Reliability Point of view): Please specify the suggestions and requirements.	N/A

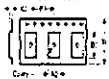
packing

物料编码 Part number	供应商名称 Supplier Name	物料信息 Info of material				最小包装信息 Info of inner packing					
		包装方式 Packing type	料带宽度 Width of tape (MM)	开孔方式 Feeding hole type	物料步距 Feeding step (MM)	内装数量 Qty	毛重 Gross weight (KG)	包装件长 Length (MM)	包装件宽 Width (MM)	包装件高 Hight (MM)	包装材质 Material
DRV2624YFFR	TI	tape reel	8.0		4.0	3000		210	185	35	

TAPE AND REEL INFORMATION

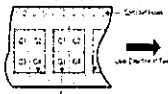


TAPE DIMENSIONS



1. Carrier and designator A. Recommended for standard applications.
2. Carrier and designator B. Recommended for applications requiring high reliability.
3. Carrier and designator C. Recommended for applications requiring high reliability and high speed.
4. Carrier and designator D. Recommended for applications requiring high reliability and high speed.
5. Carrier and designator E. Recommended for applications requiring high reliability and high speed.
6. Carrier and designator F. Recommended for applications requiring high reliability and high speed.

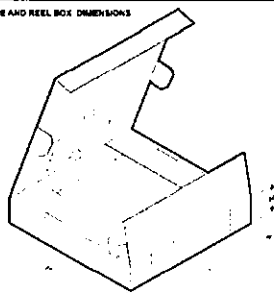
ORIENTATIONS FOR DRIVING IN TAPE



Pin Assignments

Device	Package Type	Package Drawing	Pin	SPD	Reel Diameter (mm)	Reel Width (mm)	A0 (mm)	B0 (mm)	B2 (mm)	D1 (mm)	W (mm)	Part
DRV2624YFFR	DSGA	YFFR	1	1	178.0	8.4	1.52	1.52	2.71	4.5	4.2	01

TAPE AND REEL BOX DIMENSIONS



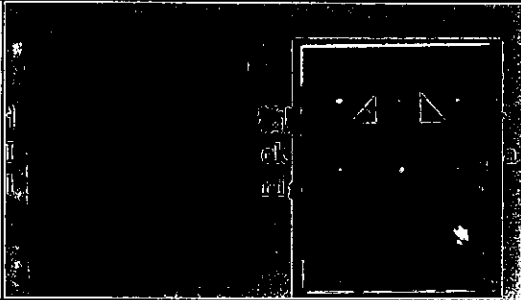
Pin Assignments and Dimensions

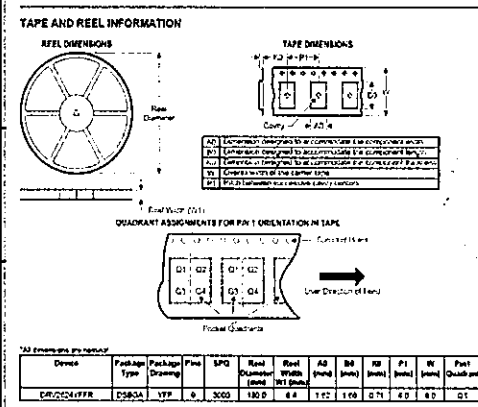
Device	Package Type	Package Drawing	Pin	SPD	Length (mm)	Width (mm)	Height (mm)
DRV2624YFFR	DSGA	YFFR	1	1000	210.0	185.0	35.0

med

客户编码 customerPart No.	*拆分部位名称 Disassembly Unit/component description	*均质材料名称 Homogeneous Material Name.	物质名称 Substance Name	*CAS No.	*物质重量 Substance Mass. (mg)	Content Rate(%) (均 质材料中的含量)
39080353	Back Side Coating	Other Inorganic Materials	Silica	7631-86-9	0.07514	55.06658
		Other Plastics and Rubber	Carbon Black	1333-86-4	0.002309	1.692158
		Other Plastics and Rubber	Imidazole Derivative	288-32-4	0.000513	0.375954
		Thermoplastics	Epoxy	85954-11-6	0.058491	42.865309
	Semiconductor Device	Ceramics / Glass	Doped Silicon	7440-21-3	1.531212	100
	Solder Bump	Copper and Its Alloys	Copper	7440-50-8	0.002741	0.499958
		Other Nonferrous Metals and Alloys	Tin	7440-31-5	0.523575	95.500013
		Precious Metals	Silver	7440-22-4	0.02193	4.00003

~~MEG~~ General Requirement for SMD

器件信息 Component information		调查结果 Investigation Result
器件俯视图、底视图 Top view photo、bottom view photo		
焊球材料成分及含量 Ball Compositions and ratio		SAC405 其它 Other (please specify):
焊球植球前的球粒直径(μm) Ball Diameter(μm) before ball attachment		0.25MM
是否背胶处理 Back side laminate		是 Yes
WLCSP器件是否有RDL层(再分布引线层) is there RDL layer in WLCSP?		是 Yes
封装遵循的标准 Package standard		EIA 其它 other (please specify):
元器件重量 Weight of component (g)		2.2mg
元件重量/贴片吸取面积是否 ≤ 0.06g/mm² Weight/ available P&P area ≤ 0.06g/mm²		是 Yes 如果不满足, 请给出具体值: If not, give the actual data:
极性标识 polarity point	器件上表面MARK信息是否有方向性标志点(例如“1”引脚标志)? Is there polarity point on the top side of component?	是 Yes
	器件表面方向性标志点是否唯一? 如果不唯一请附图说明标志点与引脚对应关系。 Is the polarity point sole? (if not, please indicate the correspondence between the component and the pin location)	是 Yes
	器件资料是否明确标注引脚位置号? Is there any specific location number of terminals in	是 Yes

	方向性器件在AOI上实际确认，需要设备能识别器件极性 component orientation can be identified by AOI?	是Yes
下面所列物质的重量比是否满足RoHS要求：（请参考此调查表的“sheet7 RoHS Compliant”） 铅、镉、汞、六价铬、多溴联苯、多溴二苯醚 Are matters RoHS compliant listed below? (please refer to		是Yes
是否无卤 Halogen-free		是Yes
存储 Storage	相对湿度（%） Relative humidity (%)	≥20%&≤70%
	温度（℃） Temperature (℃)	其它other (please specify): ≥-10℃&≤35℃ 其它other (please specify):
	可存储期限（月） Maximum storage time (month)	24 其它other (please specify):
		卷带包装tape and reel 其它other (please specify):
表贴元器件包装类型 Packaging type		
器件pin1脚标识在包装中的位置（见右图2） Position of component pin 1 in packing (see right figure 2)		figure①
料带或Tray盘高度（H），见右图3 Packaging height(H),see right figure 3		
包装宽度（W），见右图3 Packaging width(W),see right figure 3		
卷带器件料带步距:P1 component pitch:P1		
防静电包装 ESD packaging		是Yes
能否满足：料带包装中侧翻率≤0.05% Rollover rate ≤0.05% in packing		是Yes
能否承受：托盘包装125℃/24小时的烘烤条件 tray packing Baking conditions: 125℃@24h		是Yes

能否承受：卷带包装40℃/192小时的烘烤条件 reel tape packing Baking conditions: 40℃@192h	是Yes
卷带包装是否符合EIA-481标准? can reel tape packing meet EIA-481 standard?	EIA
其它other(please specify):	
潮敏等级 MSL	1
潮敏等级在2级及2级以上，潮敏防护必须包含：潮敏指示卡、干燥剂、潮敏等级标识等	是Yes
受潮后的烘烤要求是否满足J-STD-033B.1 Baking requirement if moisture	是Yes
是否满足：能承受的回流焊接次数≥3次 Maximum soldering times ≥3	是Yes
如无法满足，请填写实际规格： If not, please specify:	
针对表贴器件，其耐温性是否满足J-STD-020D要求？（重点关注耐温性和回流曲线分级两部分，即表4-1、4-2和5-2，请参考此调查表“sheet6 J-STD-020D”） Can heat resistance of SMT components meet JSTD020D. (should focus on the classification of temperature and reflow profiles, that is table 4-1, 4-2 and 5-2, please refer to sheet6 J-STD-020D in this file)	是Yes
是否满足：表贴器件中心能承受的贴片压力≥2N Maximum pick-and-place pressure (N)	是Yes
器件的焊接加工和设计要求是否已经全部写入器件规格书？ Whether the welding process and design requirements of component have all written to the component specifications	是Yes
如有设计要求，请在此说明	
器件规格书中提供的焊盘及钢网设计（包括钢网厚度）是否为强制要求？ Whether Pad & stencil design as Mandatory requirements in	推荐recommended
器件对回流焊升温斜率和降温斜率是否有特殊要求？华为采用J-STD-002D标准	无No
Whether the device has special requirements for the reflow temperature ramp-up rate and ramp-down rate? Customer follow J-STD-002 standard	如有其他特殊要求，请在此说明
器件规格书中是否有其他强制要求？ Are there other mandatory requirements in component spec?	无No
如有其他强制要求，请在此说明	

可焊性测试除使用助焊剂和锡膏按照下列要求执行外，其余条件及方法根据J-STD-002D标准执行，并提供测试报告。 待测试样品需经过蒸汽老化8小时预处理，再做可焊性测试。 1.焊料温度 可焊性检测时焊料的温度维持在$245^{\circ}\text{C} \pm 5^{\circ}\text{C}$。 2.锡膏 无铅测试锡膏成分应该为Sn96.5/Ag3.0/Cu0.5 (SAC305)。锡膏采用ROL0型，4号粉或者5号粉。 3.焊剂 可焊性测试采用非活性天然松香基液体焊剂，型号为ROL0。 4.针对BGA封装，请采用陶瓷载板法进行焊球可焊性测试，即在陶瓷载板上按照焊球矩阵印锡并回流焊接BGA，之后将BGA整个起拔，陶瓷载板上无锡膏残留即可焊性满足要求。	是Yes
Solderability shall be tested per J-STD-002D and the report must be offered, some special demands are required as below. The sample to be tested shall be pretreated with steam for 8 hours before solderability testing. 1. soldering temperature $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for lead-free 2. solder paste the composition of solder paste must be Sn96.5/Ag3.0/Cu0.5 (SAC305) for lead-free. The type of solder paste must be	添加报告 <i>please add test report here</i>