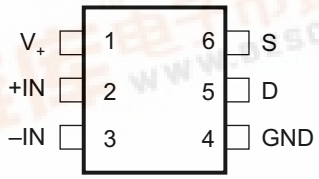
查询TXS03121供应商 捷多邦，专业PCB打样工厂，24小时加急出货

FEATURES

- **Low Supply Current: 8 µA (Max)**
- **Supply Voltage: 3 V to 5.5 V**
- **Output FET Provides Down Translation**
- **Small Package: SOT-563**
- **Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II**
- **ESD Performance**
  - **2500-V Human-Body Model (IEC61340-3-1:2002 Level 2)**
  - **250-V Machine Model (IEC61340-3-2 Level M2)**
  - **1500-V Charged-Device Model (JESD22-C101-A Level III)**

DRL PACKAGE
(TOP VIEW)



DESCRIPTION/ORDERING INFORMATION

The TXS03121 is a comparator designed for battery monitoring applications. It can be operated with a voltage of 3 V to 5.5 V. The reference voltage is applied to the –IN terminal, whereas the voltage to be monitored is connected to +IN. When the voltage at +IN is greater than the voltage at –IN, the output FET is turned On. When the voltage at +IN is less than the voltage at –IN, the output FET is turned Off. The source (S) of the output FET can be connected to 1.1 V to 3.6 V, which allows the output signal to be level translated to another voltage value. The voltage at V_+ must be greater than or equal to the voltage at S. The voltage at S must be greater than or equal to the voltage at D ($V_+ \geq V_S \geq V_D$).

ORDERING INFORMATION

T_A	PACKAGE(1)(2)		ORDERABLE PART NUMBER	TOP-SIDE MARKING
–40°C to 85°C	DRL (SOT-563)	Tape and reel	TXS03121DRLR	2FR

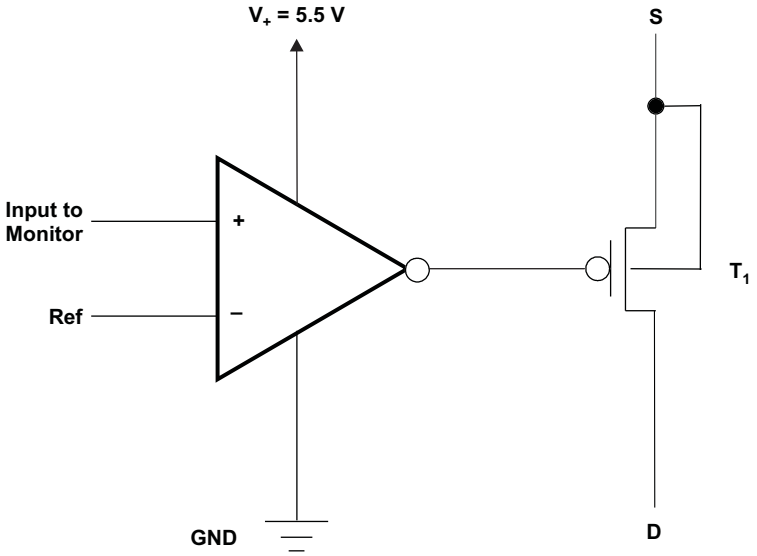
(1) Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.
(2) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI website at www.ti.com.

Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

PRODUCTION DATA information is current as of publication date.
Products conform to specifications per the terms of the Texas

Copyright © 2007, Texas Instruments Incorporated

APPLICATION BLOCK DIAGRAM



PIN ASSIGNMENTS

NO.	NAME	DESCRIPTION
1	V_+	Comparator supply voltage
2	+IN	Comparator positive input
3	–IN	Comparator negative input
4	GND	Ground
5	D	Drain of output FET
6	S	Source of output FET

Absolute Maximum Ratings(1)

over operating free-air temperature range (unless otherwise noted)

			MIN	MAX	UNIT
V_+	Supply voltage range(2)		–0.5	6.5	V
+IN, –IN	Input voltage range		–0.5	6.5	V
I_{IK}	Input clamp current	$V_I < 0$		–50	mA
I_{OK}	Output clamp current	$V_O < 0$		–50	mA
I_O	Continuous output current (On-state switch current)			±50	mA
	Continuous current through V_+ or GND			±100	mA
θ_{JA}	Package thermal impedance(3)	DRL package		171.6	°C/W
T_{stg}	Storage temperature range			150	°C

(1) Stresses above these ratings may cause permanent damage. Exposure to absolute maximum conditions for extended periods may degrade device reliability. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those specified is not implied.
(2) The input and output voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
(3) The package thermal impedance is calculated in accordance with JESD 51-7.

Recommended Operating Conditions

over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
V_+	Comparator supply voltage	3	5.5	V
V_S, V_D(1)	Output FET source or drain voltage	1.1	3.6	V
T_A	Operating free-air temperature	–40	85	°C

(1) V_+ must be greater than or equal to V_S, and V_S must be greater than or equal to V_D ($V_+ \geq V_S \geq V_D$).

Comparator Electrical Characteristics

over operating free-air temperature range (unless otherwise noted)

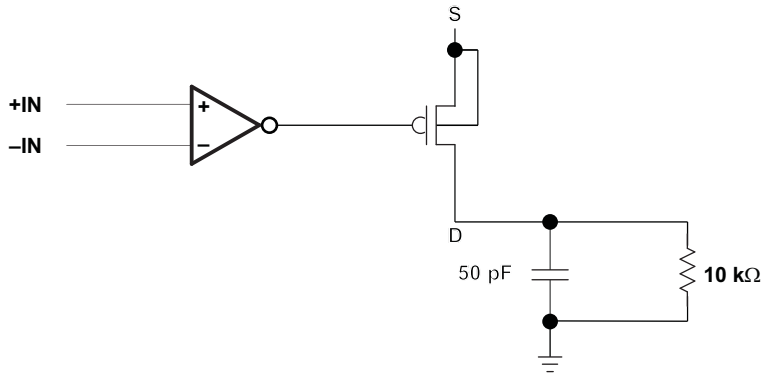
PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNIT
V_{OS}	Input offset voltage	V_+ = 3 V to 5.5 V	V_{CM} = 0.8 V, I_O = 0	–10	0.5	10	mV
			V_{CM} = V_+, I_O = 0				
V_{CM}	Common-mode voltage range	V_+ = 3 V to 5.5 V		0.8		V_+	V
I_{+IN}	Input leakage current	V_+ = 3 V to 5.5 V	V_{+IN} = 0 V to V_+			0.5	µA
$I_{–IN}$			$V_{–IN}$ = 0 V to V_+				
I_+	Supply current	V_+ = 3 V to 5.5 V				8	µA
C_{IN}	Capacitance of +IN, –IN pins				2	2.5	pF

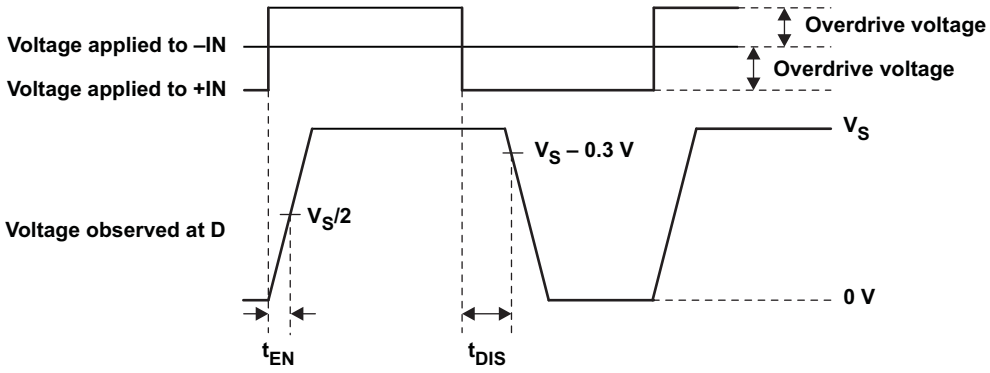
Output FET Electrical Characteristics

over operating free-air temperature range (unless otherwise noted)

PARAMETER		TEST CONDITIONS			MIN	TYP	MAX	UNIT
$I_{DS(ON)}$	On leakage current	V_S = 1.1 V to 3.6 V, Switch ON					0.5	µA
$I_{DS(OFF)}$	Off leakage current	V_S = 1.1 V to 3.6 V, V_D = Open, Switch OFF					0.5	µA
$C_{(ON)}$	On capacitance				4	5.1	6	pF
$C_{(OFF)}$	Off capacitance, S and D terminals				1.5	3.4	5	pF
R_{ON}	On resistance of output FET	$V_+ \geq V_S$, I_D = 100 µA		V_S = 1.1 V			150	Ω
				V_S = 1.4 V			65	
				V_S = 1.65 V			61	
				V_S = 2.3 V			50	
				V_S = 3 V			44	
t_{EN}	Enable time	20-mV overdrive	$V_{–IN}$ = 0.8 V, V_S = 1.65 V	V_+ = 4.5 V,			6.6	µs
				V_+ = 3 V			15	
			$V_{–IN}$ = V_+, V_S = 1.65 V	V_+ = 4.5 V			2.5	
				V_+ = 3 V			12.6	
		50-mV overdrive	V_{-IN} = 0.8 V, V_S = 1.65 V	V_+ = 4.5 V			1.6	
				V_+ = 3 V			4.1	
			$V_{–IN}$ = V_+, V_S = 1.65 V	V_+ = 4.5 V			1	
				V_+ = 3 V			3.1	
		100-mV overdrive	$V_{–IN}$ = 0.8 V, V_S = 1.65 V	V_+ = 4.5 V			0.8	
				V_+ = 3 V			2.4	
			$V_{–IN}$ = V_+, V_S = 1.65 V	V_+ = 4.5 V			0.7	
				V_+ = 3 V			2.2	
t_{DIS}	Disable time	20-mV overdrive	$V_{–IN}$ = 0.8 V, V_S = 1.65 V	V_+ = 4.5 V			10.9	µs
				V_+ = 3 V			17.4	
			$V_{–IN}$ = V_+, V_S = 1.65 V	V_+ = 4.5 V			4.2	
				V_+ = 3 V			6.8	
		50-mV overdrive	$V_{–IN}$ = 0.8 V, V_S = 1.65 V	V_+ = 4.5 V			13	
				V_+ = 3 V			15.4	
			$V_{–IN}$ = V_+, V_S = 1.65 V	V_+ = 4.5 V			2.8	
				V_+ = 3 V			5.2	
		100-mV overdrive	$V_{–IN}$ = 0.8 V, V_S = 1.65 V	V_+ = 4.5 V			16.1	
				V_+ = 3 V			16.4	
			$V_{–IN}$ = V_+, V_S = 1.65 V	V_+ = 4.5 V			1.9	
				V_+ = 3 V			4	

PARAMETER MEASUREMENT INFORMATION





PACKAGE OPTION ADDENDUM

22-Oct-2007

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
TXS03121DRLR	ACTIVE	SOT	DRL	6	4000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TXS03121DRLRG4	ACTIVE	SOT	DRL	6	4000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

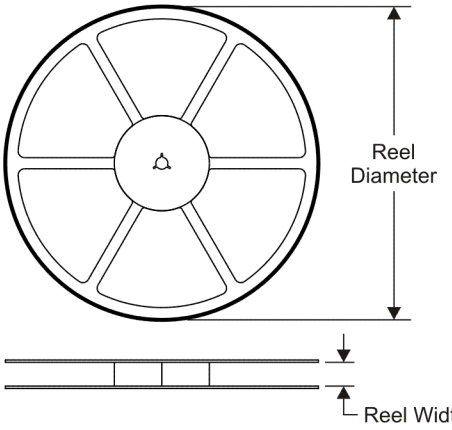
(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

Important Information and Disclaimer: The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

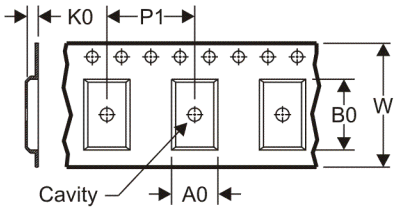
In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

TAPE AND REEL INFORMATION

REEL DIMENSIONS

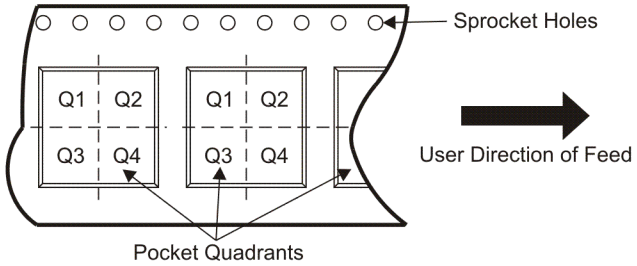


TAPE DIMENSIONS



A0	Dimension designed to accommodate the component width
B0	Dimension designed to accommodate the component length
K0	Dimension designed to accommodate the component thickness
W	Overall width of the carrier tape
P1	Pitch between successive cavity centers

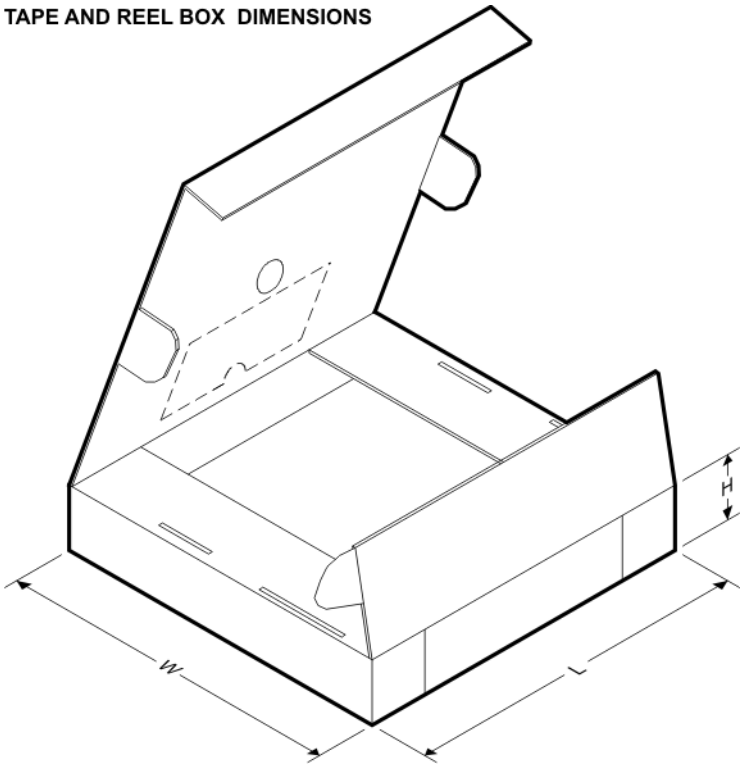
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
TXS03121DRLR	SOT	DRL	6	4000	180.0	9.0	2.0	2.0	1.0	4.0	8.0	Q3

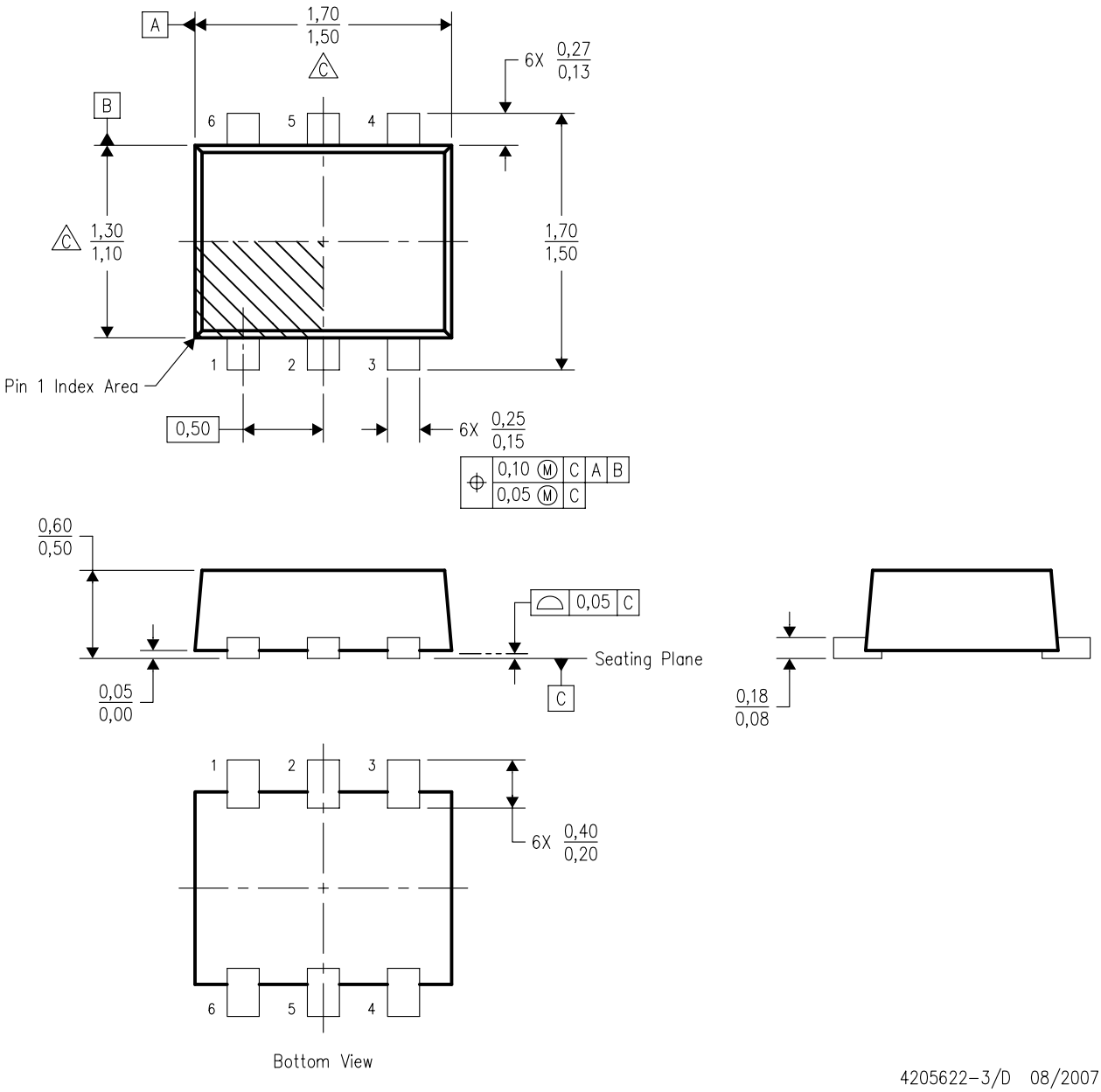
TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
TXS03121DRLR	SOT	DRL	6	4000	202.0	201.0	28.0

DRL (R–PDSO–N6) PLASTIC SMALL OUTLINE



NOTES:
A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M–1994.
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold flash, interlead flash, protrusions, or gate burrs. Mold flash, interlead flash, protrusions, or gate burrs shall not exceed 0,15 per end or side.
D. JEDEC package registration is pending.

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products		**Applications**	
Amplifiers	amplifier.ti.com	Audio	www.ti.com/audio
Data Converters	dataconverter.ti.com	Automotive	www.ti.com/automotive
DSP	dsp.ti.com	Broadband	www.ti.com/broadband
Clocks and Timers	www.ti.com/clocks	Digital Control	www.ti.com/digitalcontrol
Interface	interface.ti.com	Medical	www.ti.com/medical
Logic	logic.ti.com	Military	www.ti.com/military
Power Mgmt	power.ti.com	Optical Networking	www.ti.com/opticalnetwork
Microcontrollers	microcontroller.ti.com	Security	www.ti.com/security
RFID	www.ti-rfid.com	Telephony	www.ti.com/telephony
RF/IF and ZigBee® Solutions	www.ti.com/lprf	Video & Imaging	www.ti.com/video
		Wireless	www.ti.com/wireless

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2008, Texas Instruments Incorporated