

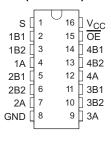
Low-Voltage 4-Bit 1-of-2 FET Multiplexer/Demultiplexer

Check for Samples: SN74CBTLV3257

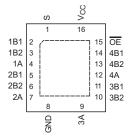
FEATURES

- 5-Ω Switch Connection Between Two Ports
- · Rail-to-Rail Switching on Data I/O Ports
- loff Supports Partial-Power-Down Mode Operation
- Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II
- ESD Protection Exceeds JESD 22
 - 2000-V Human-Body Model (A114-A)
 - 200-V Machine Model (A115-A)

D, DBQ, DGV, OR PW PACKAGE (TOP VIEW)



RGY PACKAGE (TOP VIEW)



RSV PACKAGE (TOP VIEW)



DESCRIPTION

The SN74CBTLV3257 is a 4-bit 1-of-2 high-speed FET multiplexer/demultiplexer. The low on-state resistance of the switch allows connections to be made with minimal propagation delay.

The select (S) input controls the data flow. The FET multiplexers/demultiplexers are disabled when the outputenable (OE) input is high.

This device is fully specified for partial-power-down applications using I_{off}. The loff feature ensures that damaging current will not backflow through the device when it is powered down. The device has isolation during power off.

To ensure the high-impedance state during power up or power down, \overline{OE} should be tied to V_{CC} through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.

ORDERING INFORMATION

T _A	PACKA	GE ^{(1) (2)}	ORDERABLE PART NUMBER	TOP-SIDE MARKING
	QFN - RSV	Reel of 3000	SN74CBTLV3257RSVR	ZTR
	QFN – RGY	Reel of 3000	SN74CBTLV3257RGYR	CL257
	SOIC - D	Tube of 40	SN74CBTLV3257D	CBTLV3257
-40°C to 85°C	201C - D	Reel of 2500	SN74CBTLV3257DR	CBILV3257
	SSOP (QSOP) – DBQ	Reel of 2500	SN74CBTLV3257DBQR	CL257
	TSSOP – PW	Reel of 2000	SN74CBTLV3257PWR	CL257
	TVSOP - DGV	Reel of 2000	SN74CBTLV3257DGVR	CL257

- (1) Package drawings, thermal data, and symbolization are available at www.ti.com/packaging.
- (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.



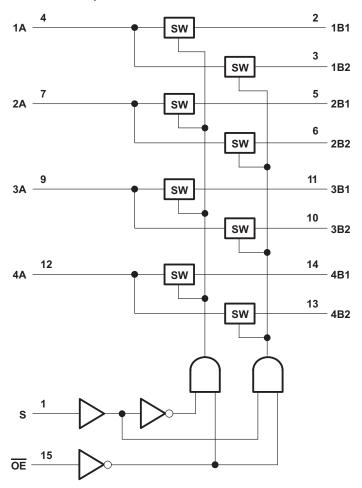


These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

Table 1. FUNCTION TABLE

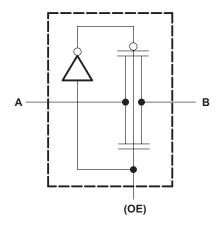
INPUTS		FUNCTION
/OE	S	FUNCTION
L	L	A port = B1 port
L	Н	A port = B2 port
Н	Х	Disconnect

LOGIC DIAGRAM (POSITIVE LOGIC)





SIMPLIFIED SCHEMATIC, EACH FET SWITCH



ABSOLUTE MAXIMUM RATINGS(1)

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

			VALU	VALUE			
			MIN	MIN MAX			
V _{CC}	Supply voltage range		-0.5	4.6	V		
VI	Input voltage range (2)		-0.5	4.6	V		
	Continuous channel of		128	mA			
I _{IK}	Input clamp current (\	(_{I/O} < 0)		-50	mA		
		D package ⁽³⁾		73	°C/W		
		DBQ package ⁽³⁾		90	°C/W		
θ_{JA}	Package thermal impedance	DGV package ⁽³⁾		120	°C/W		
		PW package ⁽³⁾		108	°C/W		
		RGY package (4)		39	°C/W		
T _{stg}	Storage temperature	-65	150	°C			

⁽¹⁾ Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

RECOMMENDED OPERATING CONDITIONS⁽¹⁾

			MIN	MAX	UNIT
V_{CC}	Supply voltage		2.3	3.6	V
V _{IH} High-level control input voltage		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	1.7		V
		V _{CC} = 2.7 V to 3.6 V	2		V
	Low-level control input	V _{CC} = 2.3 V to 2.7 V		0.7	1/
V_{IL}	voltage	$V_{CC} = 2.7 \text{ V to } 3.6 \text{ V}$		8.0	V
T _A Operating free-air temperature				85	°C

(1) All unused control inputs of the device must be held at VCC or GND to ensure proper device operation. Refer to the TI application report, *Implications of Slow or Floating CMOS Inputs*, literature number SCBA004.

⁽²⁾ The input and output negative-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.

⁽⁴⁾ The package thermal impedance is calculated in accordance with JESD 51-5.



ELECTRICAL CHARACTERISTICS

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

PARAMETER			TEST CONDITIONS					
V _{IK}		$V_{CC} = 3 V$,	I _I = −18 mA				-1.2	V
I		$V_{CC} = 3.6 \text{ V},$	$VI = V_{CC}$ or GND				±1	μΑ
I _{off}		$V_{CC} = 0$,	V_{I} or $V_{O} = 0$ to 3.6	SV			15	μΑ
I _{CC}		$V_{CC} = 3.6 \text{ V},$	$I_{O} = 0$,	$V_I = V_{CC}$ or GND			10	μΑ
$\Delta I_{CC}^{(2)}$	Control	$V_{CC} = 3.6 \text{ V},$	One input at 3 V,	Other inputs at V _{CC} or GND			300	μΑ
C _i	inputs	$V_I = 3 V \text{ or } 0$				3		pF
	A port	V 2 V or 0	ŌĒ = V _{CC}			10.5		~F
C _{io(OFF)}	B port	$V_0 = 3 \text{ V or } 0,$	OE = V _{CC}			5.5	pF	
		V _{CC} = 2.3 V,	V _I = 0	I _I = 64 mA		5	8	
		TYP at $V_{CC} = 2.5 \text{ V}$		I _I = 24 mA		5	8	
" (3)			$V_I = 1.7 V$	I _I = 15 mA		27	40	Ω
r _{on} (3)			$V_I = 0$	I _I = 64 mA		5	7	12
		$V_{CC} = 3 V$		I _I = 24 mA		5	7	
			V _I = 2.4 V	I _I = 15 mA		10	15	

- All typical values are at $V_{CC} = 3.3 \text{ V}$ (unless otherwise noted), $T_A = 25^{\circ}\text{C}$. This is the increase in supply current for each input that is at the specified voltage level, rather than V_{CC} or GND. Measured by the voltage drop between the A and the B terminals at the indicated current through the switch. On-state resistance is determined by the lower of the voltages of the two (A or B) terminals

SWITCHING CHARACTERISTICS

over recommended operating free-air temperature range (unless otherwise noted) (See Figure 1)

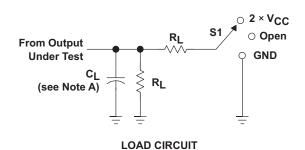
PARAMETER	EDOM (INDUT)	TO (OUTPUT)	$V_{CC} = 2.5 \pm 0$	0.2 V	$V_{CC} = 3.3$	UNIT	
PARAMETER	FROM (INPUT)	TO (OUTPUT)	MIN	MAX	MIN	MAX	UNIT
4	A or B ⁽¹⁾	B or A		0.15		0.25	
t _{pd}	S	A or B	1.8	6.1	1.8	5.3	ns
t _{en}	S	A or B	1.7	6.1	1.7	5.3	ns
t _{dis}	S	A or B	1	4.8	1	4.5	ns
t _{en}	ŌĒ	A or B	1.9	5.6	2	5	ns
t _{dis}	ŌĒ	A or B	1	5.5	1.6	5.5	ns

(1) The propagation delay is the calculated RC time constant of the typical on-state resistance of the switch and the specified load capacitance, when driven by an ideal voltage source (zero output impedance).

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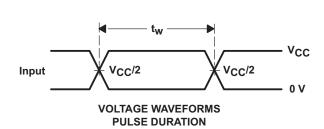


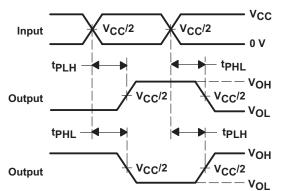
PARAMETER MEASUREMENT INFORMATION



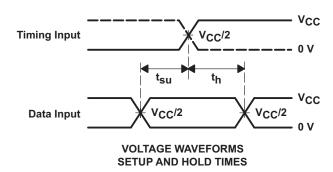
TEST	S1
tPLH/tPHL	Open
t _{PLZ} /t _{PZL}	2 × V _{CC}
tPHZ/tPZH	GND

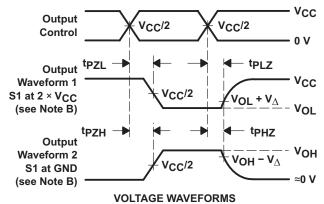
V _C C	CL	R_{L}	${f v}_{\!\scriptscriptstyle \Delta}$
$2.5~V\pm0.2~V$	30 pF	500 Ω	0.15 V
3.3 V \pm 0.3 V	50 pF	500 Ω	0.3 V





VOLTAGE WAVEFORMS
PROPAGATION DELAY TIMES
INVERTING AND NONINVERTING OUTPUTS





ENABLE AND DISABLE TIMES
LOW- AND HIGH-LEVEL ENABLING

- NOTES: A. C_L includes probe and jig capacitance.
 - B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.
 - C. All input pulses are supplied by generators having the following characteristics: PRR \leq 10 MHz, $Z_O = 50 \ \Omega$, $t_f \leq$ 2 ns, $t_f \leq$ 2 ns.
 - D. The outputs are measured one at a time with one transition per measurement.
 - E. tpLz and tpHz are the same as tdis.
 - F. t_{PZL} and t_{PZH} are the same as t_{en}.
 - G. tpLH and tpHL are the same as tpd.
 - H. All parameters and waveforms are not applicable to all devices.

Figure 1. Load Circuit and Voltage Waveforms



REVISION HISTORY

Cł	nanges from Revision I (OCTOBER 2003) to Revision J	Page	÷
•	Added QFN ordering info and package pinout	1	ı





21-Mar-2013

PACKAGING INFORMATION

Orderable Device	Status	Package Type	Package Drawing	Pins	Package Qty	Eco Plan	Lead/Ball Finish	MSL Peak Temp	Op Temp (°C)	Top-Side Markings	Sample
74CBTLV3257DBQRE4	ACTIVE	SSOP	DBQ	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 85	CL257	Sample
74CBTLV3257DBQRG4	ACTIVE	SSOP	DBQ	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 85	CL257	Sample
74CBTLV3257DGVRE4	ACTIVE	TVSOP	DGV	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Sample
74CBTLV3257DGVRG4	ACTIVE	TVSOP	DGV	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Sample
74CBTLV3257PWRE4	ACTIVE	TSSOP	PW	16		Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Sample
74CBTLV3257PWRG4	ACTIVE	TSSOP	PW	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Sample
74CBTLV3257RGYRG4	ACTIVE	VQFN	RGY	16	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 85	CL257	Sample
SN74CBTLV3257D	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CBTLV3257	Sample
SN74CBTLV3257DBQR	ACTIVE	SSOP	DBQ	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 85	CL257	Sample
SN74CBTLV3257DE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CBTLV3257	Sample
SN74CBTLV3257DG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CBTLV3257	Sample
SN74CBTLV3257DGVR	ACTIVE	TVSOP	DGV	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Sample
SN74CBTLV3257DR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CBTLV3257	Sample
SN74CBTLV3257DRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CBTLV3257	Sample
SN74CBTLV3257DRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CBTLV3257	Sample
SN74CBTLV3257PW	ACTIVE	TSSOP	PW	16	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Sample
SN74CBTLV3257PWE4	ACTIVE	TSSOP	PW	16	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Sample



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Orderable Device	Status	Package Type	·	Pins	Package Qty	Eco Plan	Lead/Ball Finish	MSL Peak Temp	Op Temp (°C)	Top-Side Markings	Samples
	(1)		Drawing			(2)		(3)		(4)	
SN74CBTLV3257PWG4	ACTIVE	TSSOP	PW	16	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Samples
SN74CBTLV3257PWR	ACTIVE	TSSOP	PW	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	CL257	Samples
SN74CBTLV3257RGYR	ACTIVE	VQFN	RGY	16	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 85	CL257	Samples
SN74CBTLV3257RSVR	ACTIVE	UQFN	RSV	16	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ZTR	Samples

(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.

⁽⁴⁾ Only one of markings shown within the brackets will appear on the physical device.

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OTHER QUALIFIED VERSIONS OF SN74CBTLV3257:



PACKAGE OPTION ADDENDUM

21-Mar-2013

● Enhanced Product: SN74CBTLV3257-EP

NOTE: Qualified Version Definitions:

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• Enhanced Product - Supports Defense, Aerospace and Medical Applications

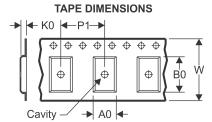
TEXAS INSTRUMENTS

PACKAGE MATERIALS INFORMATION

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TAPE AND REEL INFORMATION





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

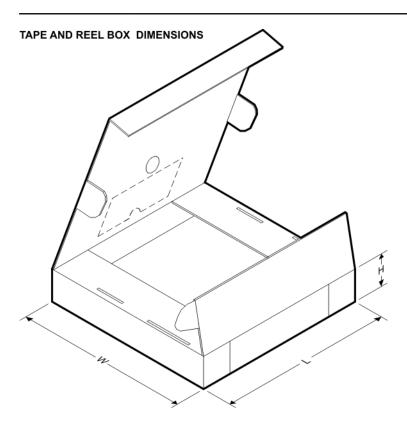
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*All dimensions are nominal

Device	Package Type	Package Drawing		SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
74CBTLV3257PWRG4	TSSOP	PW	16	2000	330.0	12.4	6.9	5.6	1.6	8.0	12.0	Q1
SN74CBTLV3257DGVR	TVSOP	DGV	16	2000	330.0	12.4	6.8	4.0	1.6	8.0	12.0	Q1
SN74CBTLV3257DR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
SN74CBTLV3257PWR	TSSOP	PW	16	2000	330.0	12.4	7.0	5.6	1.6	8.0	12.0	Q1
SN74CBTLV3257PWR	TSSOP	PW	16	2000	330.0	12.4	6.9	5.6	1.6	8.0	12.0	Q1
SN74CBTLV3257RGYR	VQFN	RGY	16	3000	330.0	12.4	3.8	4.3	1.5	8.0	12.0	Q1

www.ti.com 29-Nov-2012



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
74CBTLV3257PWRG4	TSSOP	PW	16	2000	367.0	367.0	35.0
SN74CBTLV3257DGVR	TVSOP	DGV	16	2000	367.0	367.0	35.0
SN74CBTLV3257DR	SOIC	D	16	2500	333.2	345.9	28.6
SN74CBTLV3257PWR	TSSOP	PW	16	2000	364.0	364.0	27.0
SN74CBTLV3257PWR	TSSOP	PW	16	2000	367.0	367.0	35.0
SN74CBTLV3257RGYR	VQFN	RGY	16	3000	367.0	367.0	35.0

DGV (R-PDSO-G**)

24 PINS SHOWN

PLASTIC SMALL-OUTLINE



NOTES: A. All linear dimensions are in millimeters.

B. This drawing is subject to change without notice.

C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15 per side.

D. Falls within JEDEC: 24/48 Pins – MO-153 14/16/20/56 Pins – MO-194



D (R-PDS0-G16)

PLASTIC SMALL OUTLINE



- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.006 (0,15) each side.
- Body width does not include interlead flash. Interlead flash shall not exceed 0.017 (0,43) each side.
- E. Reference JEDEC MS-012 variation AC.



PW (R-PDSO-G16)

PLASTIC SMALL OUTLINE

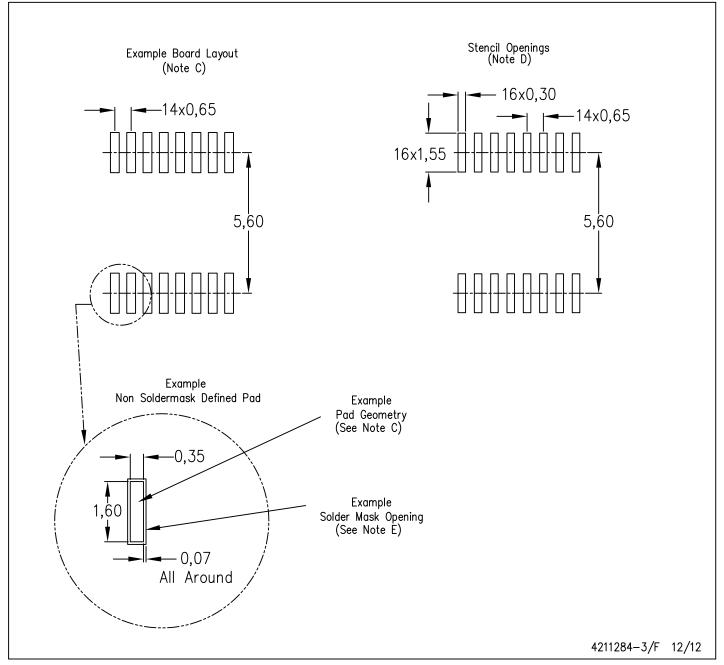


- A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M—1994.
- B. This drawing is subject to change without notice.
- Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0,15 each side.
- Body width does not include interlead flash. Interlead flash shall not exceed 0,25 each side.
- E. Falls within JEDEC MO-153



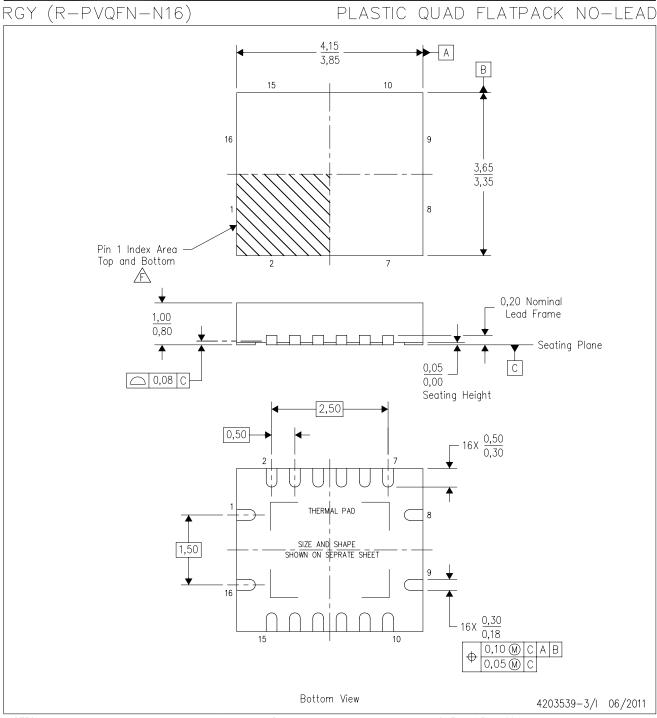
PW (R-PDSO-G16)

PLASTIC SMALL OUTLINE



- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Publication IPC-7351 is recommended for alternate designs.
- D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
- E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.





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. QFN (Quad Flatpack No-Lead) package configuration.
- D. The package thermal pad must be soldered to the board for thermal and mechanical performance.
- E. See the additional figure in the Product Data Sheet for details regarding the exposed thermal pad features and dimensions.
- Pin 1 identifiers are located on both top and bottom of the package and within the zone indicated. The Pin 1 identifiers are either a molded, marked, or metal feature.
- G. Package complies to JEDEC MO-241 variation BA.



RGY (R-PVQFN-N16)

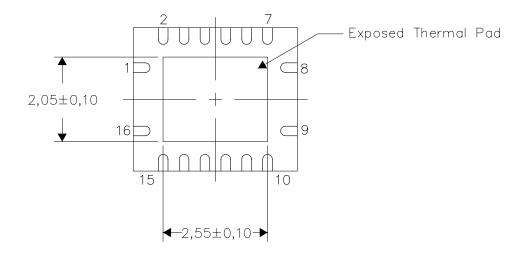
PLASTIC QUAD FLATPACK NO-LEAD

THERMAL INFORMATION

This package incorporates an exposed thermal pad that is designed to be attached directly to an external heatsink. The thermal pad must be soldered directly to the printed circuit board (PCB). After soldering, the PCB can be used as a heatsink. In addition, through the use of thermal vias, the thermal pad can be attached directly to the appropriate copper plane shown in the electrical schematic for the device, or alternatively, can be attached to a special heatsink structure designed into the PCB. This design optimizes the heat transfer from the integrated circuit (IC).

For information on the Quad Flatpack No-Lead (QFN) package and its advantages, refer to Application Report, QFN/SON PCB Attachment, Texas Instruments Literature No. SLUA271. This document is available at www.ti.com.

The exposed thermal pad dimensions for this package are shown in the following illustration.



Bottom View

Exposed Thermal Pad Dimensions

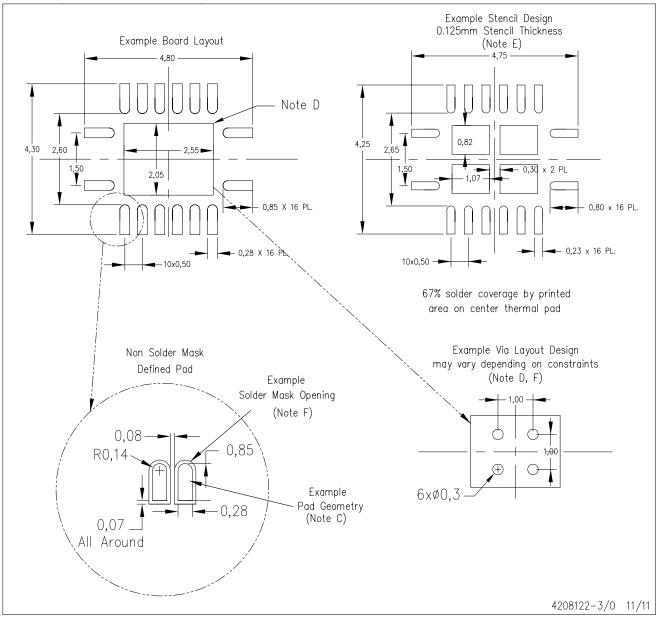
4206353-3/0 11/11

NOTE: All linear dimensions are in millimeters



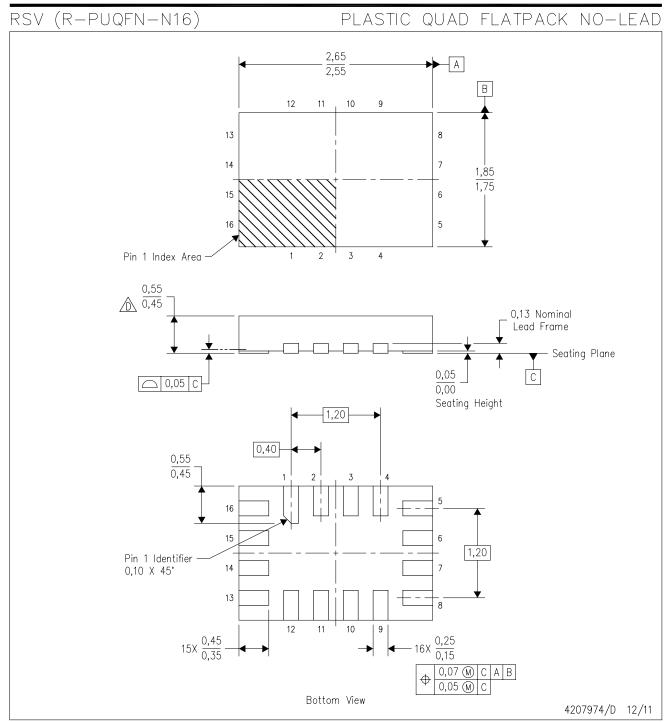
RGY (R-PVQFN-N16)

PLASTIC QUAD FLATPACK NO-LEAD



- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Publication IPC-7351 is recommended for alternate designs.
- D. This package is designed to be soldered to a thermal pad on the board. Refer to Application Note, Quad Flat—Pack QFN/SON PCB Attachment, Texas Instruments Literature No. SLUA271, and also the Product Data Sheets for specific thermal information, via requirements, and recommended board layout. These documents are available at www.ti.com http://www.ti.com.
- E. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC 7525 for stencil design considerations.
- F. Customers should contact their board fabrication site for minimum solder mask web tolerances between signal pads.





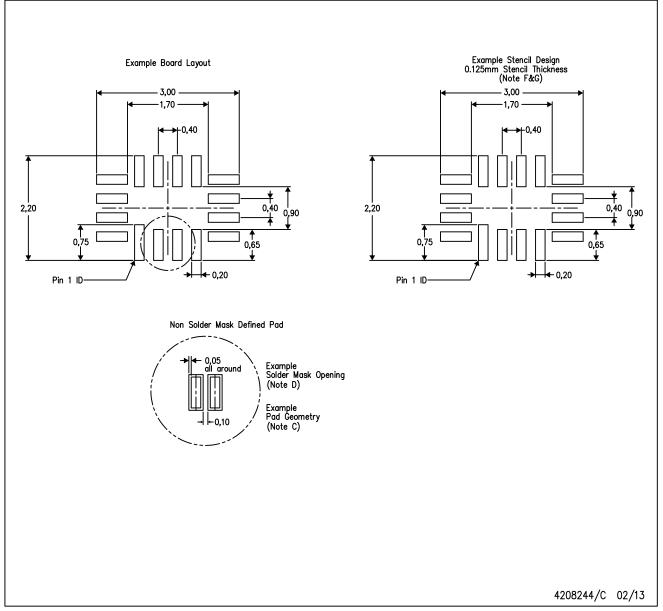
NOTES: A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M-1994.

- B. This drawing is subject to change without notice.
- C. QFN (Quad Flatpack No-Lead) package configuration.
- This package complies to JEDEC MO-288 variation UFHE, except minimum package thickness.



RSV (R-PUQFN-N16)

PLASTIC QUAD FLATPACK NO-LEAD



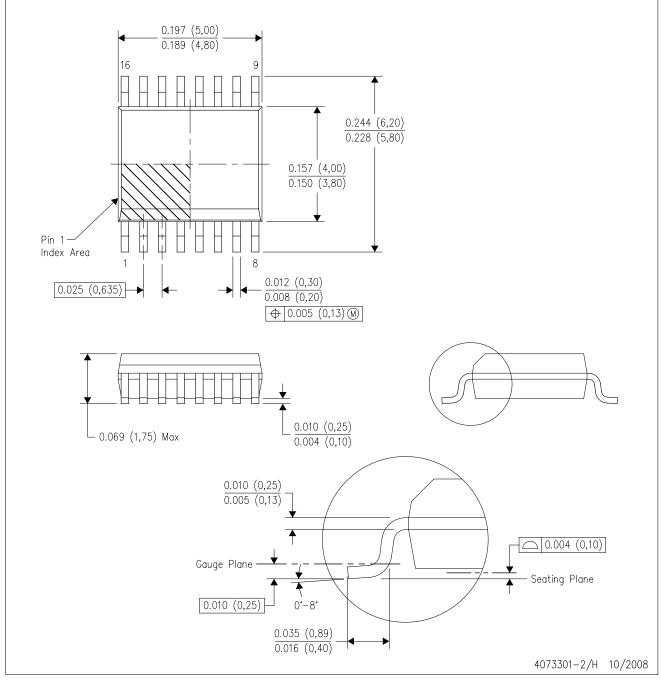
NOTES: A.

- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Publication IPC-7351 is recommended for alternate designs.
- D. Customers should contact their board fabrication site for minimum solder mask web tolerances between signal pads.
- E. Maximum stencil thickness 0,127 mm (5 mils). All linear dimensions are in millimeters.
- F. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC 7525 for stencil design considerations.
- G. Side aperture dimensions over—print land for acceptable area ratio > 0.66. Customer may reduce side aperture dimensions if stencil manufacturing process allows for sufficient release at smaller opening.



DBQ (R-PDSO-G16)

PLASTIC SMALL-OUTLINE PACKAGE

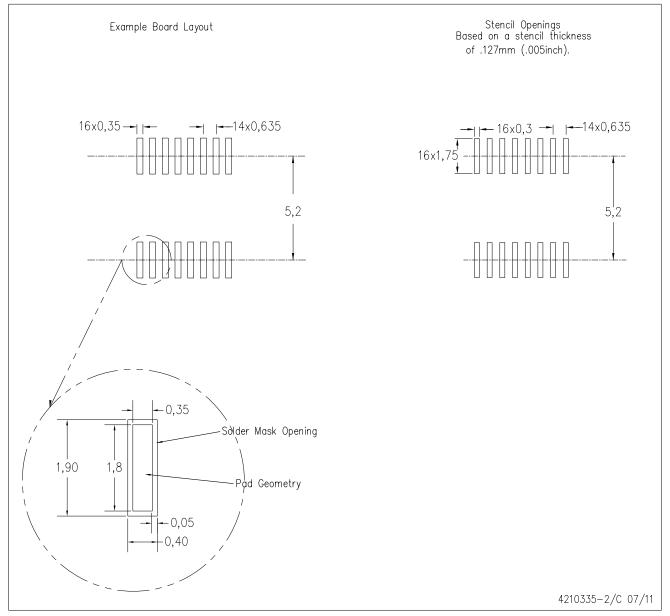


- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15) per side.
- D. Falls within JEDEC MO-137 variation AB.



DBQ (R-PDSO-G16)

PLASTIC SMALL OUTLINE PACKAGE



- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Customers should place a note on the circuit board fabrication drawing not to alter the center solder mask defined pad.
- D. Publication IPC-7351 is recommended for alternate designs.
- E. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Example stencil design based on a 50% volumetric metal load solder paste. Refer to IPC-7525 for other stencil recommendations.



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