



## ULTRA-LOW VOLTAGE PROCESSOR SUPERVISORY CIRCUITS

### FEATURES

- Minimum Supply Voltage of 0.75 V
- Supply Voltage Supervision Range:
  - 1.2 V, 1.5 V, 1.8 V (TPS312x)
  - 3 V (TPS3125 Devices Only)
  - Other Versions on Request
- Power-On Reset Generator With Fixed Delay Time of 180 ms
- Manual Reset Input (TPS3123/5/6/8)
- Watchdog Timer Retriggeres the  $\overline{\text{RESET}}$  Output at  $V_{DD} \geq V_{IT}$
- Supply Current of 14  $\mu\text{A}$  (Typ)
- Small SOT23-5 Package
- Temperature Range of  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$
- Reset Output Available in Push-Pull (Active Low and High) and Open-Drain (Active-Low)

### APPLICATIONS

- Applications Using Low Voltage DSPs, Microcontrollers, or Microprocessors
- Portable/Battery-Powered Equipment
- Wireless Communication Systems
- Programmable Controls
- Industrial Equipment
- Notebook/Desktop Computers
- Intelligent Instruments

DBV PACKAGE (TOP VIEW)

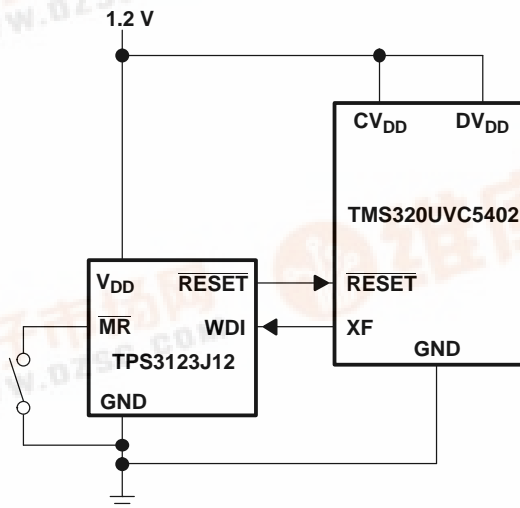
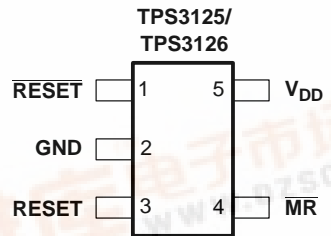
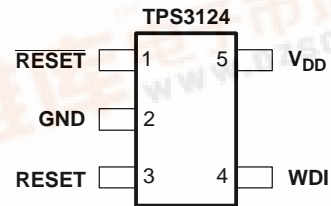
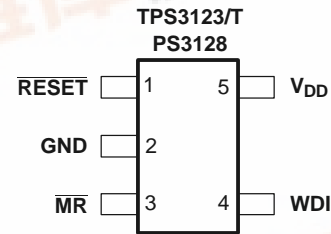


Figure 1. Typical Low-Voltage DSP Application

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.

## DESCRIPTION

The TPS312x family of ultralow voltage processor supervisory circuits provides circuit initialization and timing supervision, primarily for DSP and processor-based systems.

During power-on,  $\overline{\text{RESET}}$  is asserted when the supply voltage ( $V_{DD}$ ) becomes higher than 0.75 V. Thereafter, the supply voltage supervisor monitors  $V_{DD}$  and keeps  $\overline{\text{RESET}}$  output active as long as  $V_{DD}$  remains below the threshold voltage ( $V_{IT}$ ). An internal timer delays the return of the output to the inactive state (high) to ensure proper system reset. The delay time,  $t_d = 180$  ms, starts after  $V_{DD}$  has risen above the threshold voltage ( $V_{IT}$ ).

When the supply voltage drops below the threshold voltage ( $V_{IT}$ ), the output becomes active (low) again. No external components are required. All the devices of this family have a fixed-sense threshold voltage ( $V_{IT}$ ) set by a high precision internal voltage divider.

The TPS3123/5/6/8 devices incorporate a manual reset input,  $\overline{\text{MR}}$ . A low level at  $\overline{\text{MR}}$  causes  $\overline{\text{RESET}}$  to become active. The TPS3124 devices do not have the input  $\overline{\text{MR}}$ , but include a high-level output  $\overline{\text{RESET}}$  same as the TPS3125 and TPS3126 devices. In addition, the TPS3123/4/8 have a watchdog timer that needs to be triggered periodically by a positive or negative transition at  $\overline{\text{WDI}}$ . When the supervising system fails to retrigger the watchdog circuit within the time-out interval  $t_{\text{out}} = 0.8$  s,  $\overline{\text{RESET}}$  output becomes active for the time period ( $t_d$ ). This event also reinitializes the watchdog timer.

The circuits are available in a 5-pin SOT23-5 package. The TPS312x devices are characterized for operation over a temperature range of  $-40^\circ\text{C}$  to  $85^\circ\text{C}$ .

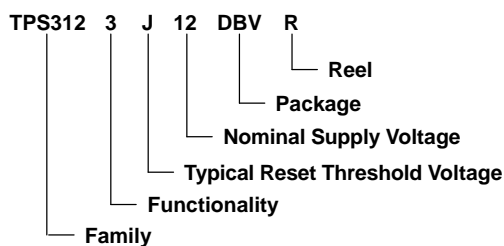
### PACKAGE INFORMATION STANDARD VERSIONS<sup>(1)</sup>

$T_A$	DEVICE NAME		THRESHOLD VOLTAGE	MARKING
-40°C to 85°C	TPS3123J12DBVR <sup>(2)</sup>	TPS3123J12DBVT <sup>(3)</sup>	1.08 V	PBNI
	TPS3123G15DBVR <sup>(2)</sup>	TPS3123G15DBVT <sup>(3)</sup>	1.40 V	PBOI
	TPS3123J18DBVR <sup>(2)</sup>	TPS3123J18DBVT <sup>(3)</sup>	1.62 V	PBPI
	TPS3124J12DBVR <sup>(2)</sup>	TPS3124J12DBVT <sup>(3)</sup>	1.08 V	PBQI
	TPS3124G15DBVR <sup>(2)</sup>	TPS3124G15DBVT <sup>(3)</sup>	1.40 V	PBRI
	TPS3124J18DBVR <sup>(2)</sup>	TPS3124J18DBVT <sup>(3)</sup>	1.62 V	PBSI
	TPS3125J12DBVR <sup>(2)</sup>	TPS3125J12DBVT <sup>(3)</sup>	1.08 V	PBTI
	TPS3125G15DBVR <sup>(2)</sup>	TPS3125G15DBVT <sup>(3)</sup>	1.40 V	PBUI
	TPS3125J18DBVR <sup>(2)</sup>	TPS3125J18DBVT <sup>(3)</sup>	1.62 V	PBVI
	TPS3125L30DBVR <sup>(2)</sup>	TPS3125L30DBVT <sup>(3)</sup>	2.64 V	PBXI
	TPS3126E12DBVR <sup>(2)</sup>	TPS3126E12DBVT <sup>(3)</sup>	1.14 V	PFOI
	TPS3126E15DBVR <sup>(2)</sup>	TPS3126E15DBVT <sup>(3)</sup>	1.43 V	PFPI
	TPS3126E18DBVR <sup>(2)</sup>	TPS3126E18DBVT <sup>(3)</sup>	1.71 V	PFQI
	TPS3128E12DBVR <sup>(2)</sup>	TPS3128E12DBVT <sup>(3)</sup>	1.14 V	PFRI
	TPS3128E15DBVR <sup>(2)</sup>	TPS3128E15DBVT <sup>(3)</sup>	1.43 V	PFSI
TPS3128E18DBVR <sup>(2)</sup>	TPS3128E18DBVT <sup>(3)</sup>	1.71 V	PFTI	

(1) Other versions available. Contact Texas Instruments for details, minimum order quantities apply.

(2) The DBVR passive indicates tape and reel of 3000 parts.

(3) The DBVT passive indicates tape and reel of 250 parts.



**Table 1. Ordering Information Application Specific Versions <sup>(1)</sup>**

DEVICE NAME	NOMINAL SUPPLY VOLTAGE, $V_{NOM}$	DEVICE NAME	TYPICAL RESET THRESHOLD VOLTAGE- $V_{IT}$
TPS312xx12DBV	1.2 V	TPS312xAxxDBV	$V_{NOM}$ -1%
TPS312xx15DBV	1.5 V	TPS312xBxxDBV	$V_{NOM}$ -2%
TPS312xx18DBV	1.8 V	TPS312xCxxDBV	$V_{NOM}$ -3%
TPS312xx30DBV	3.0 V	TPS312xDxxDBV	$V_{NOM}$ -4%
		TPS312xExxDBV	$V_{NOM}$ -5%
		TPS312xFxxDBV	$V_{NOM}$ -6%
		TPS312xGxxDBV	$V_{NOM}$ -7%
		TPS312xHxxDBV	$V_{NOM}$ -8%
		TPS312xIxxDBV	$V_{NOM}$ -9%
		TPS312xJxxDBV	$V_{NOM}$ -10%
		TPS312xKxxDBV	$V_{NOM}$ -11%
		TPS312xLxxDBV	$V_{NOM}$ -12%
		TPS312xMxxDBV	$V_{NOM}$ -13%
		TPS312xNxxDBV	$V_{NOM}$ -14%
		TPS312xOxxDBV	$V_{NOM}$ -15%

(1) For the application specific versions contact Texas Instruments for availability, lead time, and minimum order quantities.

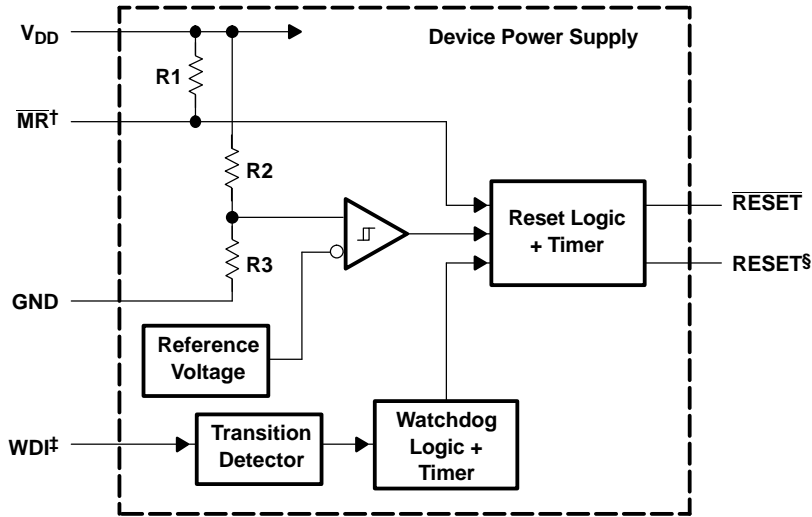
**Table 2. Function Tables**

TPS3123/8			TPS3124			TPS3125/6			
MR	VDD > $V_{IT}$	RESET	VDD > $V_{IT}$	RESET	RESET	MR	VDD > $V_{IT}$	RESET	RESET
L	0	L	0	L	H	L	0	L	H
L	1	L	1	H	L	L	1	L	H
H	0	L				H	0	L	H
H	1	H				H	1	H	L

**Reset Topology**

DEVICES	OPEN DRAIN	PUSH-PULL
TPS3123		X
TPS3124		X
TPS3125		X
TPS3126	X	
TPS3128	X	

FUNCTIONAL BLOCK DIAGRAM

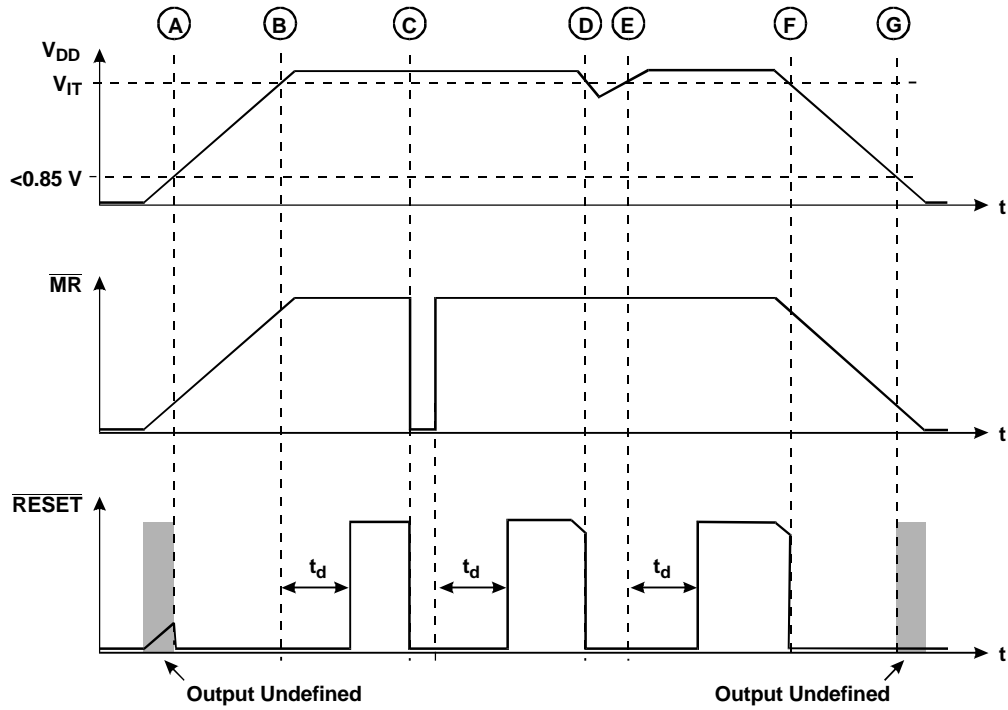


† TPS3123/5/6/8

‡ TPS3123/4/8

§ TPS3124/5/6

TIMING DIAGRAM TPS3123/5/6/8





### DISSIPATION RATING TABLE

PACKAGE	T <sub>A</sub> ≤ 25°C POWER RATING	DERATING FACTOR ABOVE T <sub>A</sub> = 25°C	T <sub>A</sub> = 70°C POWER RATING	T <sub>A</sub> = 85°C POWER RATING
DBV	437 mW	3.5 mW/°C	280 mW	227 mW

### RECOMMENDED OPERATING CONDITIONS

at specified temperature range

		MIN	MAX	UNIT
V <sub>DD</sub>	Supply voltage	T <sub>A</sub> = 0°C to 85°C		V
		0.75	3.3	
V <sub>DD</sub>	Manual reset voltage	T <sub>A</sub> = -40°C to 85°C		V
		0.85	3.3	
V <sub>DD</sub>	Manual reset voltage	0.0	V <sub>DD</sub> +0.3	V
V <sub>WD1</sub>	Watchdog input voltage	0	V <sub>DD</sub> +0.3	V
V <sub>IH</sub>	High-level input voltage	0.7×V <sub>DD</sub>		V
V <sub>IL</sub>	Low-level input voltage	0.3×V <sub>DD</sub>		V
Δ t/ΔV	Input transition rise and fall rate at WDI	1		μs/V
T <sub>A</sub>	Operating free-air temperature range	40	85	°C

### ELECTRICAL CHARACTERISTICS

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

PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNIT
$\overline{MR}$ pullup resistor (internal)				27			kΩ
I <sub>IH</sub>	High-level input current	WDI	WDI = V <sub>DD</sub> = 3.3 V	1		1	μA
		$\overline{MR}$	$\overline{MR}$ = 0.7 × V <sub>DD</sub> , V <sub>DD</sub> = 3.3 V	20		55	
I <sub>IL</sub>	Low-level input current	WDI	WDI = 0 V, V <sub>DD</sub> = 3.3 V	1		1	μA
		$\overline{MR}$	$\overline{MR}$ = 0 V, V <sub>DD</sub> = 3.3 V	80		170	
I <sub>OH</sub>	High-level output current (leakage into RESET pin)	TPS3126-xx, TPS3128-xx	V <sub>DD</sub> = V <sub>OH</sub> = 3.3 V			200	nA
V <sub>OH</sub>	High-level output voltage (TPS3123/4/5 only)	RESET	V <sub>DD</sub> = 1.5 V, I <sub>OH</sub> = -1 mA	0.8×V <sub>DD</sub>			V
			V <sub>DD</sub> = 3.3 V, I <sub>OH</sub> = -4.5 mA				
RESET	V <sub>DD</sub> = 0.75 V, I <sub>OH</sub> = -8 μA						
	V <sub>DD</sub> = 1.5 V, I <sub>OH</sub> = -1 mA						
V <sub>OL</sub>	Low-level output voltage	RESET	V <sub>DD</sub> = 0.75 V, I <sub>OL</sub> = 15 μA	0.2 × V <sub>DD</sub>			V
			V <sub>DD</sub> = 1.5 V, I <sub>OL</sub> = 1.4 mA				
		RESET	V <sub>DD</sub> = 1.5 V, I <sub>OL</sub> = 1.4 mA				
			V <sub>DD</sub> = 3.3 V, I <sub>OL</sub> = 3 mA				
V <sub>IT-</sub>	Negative-going input threshold voltage <sup>(1)</sup>	TPS312xJ12	T <sub>A</sub> = -40°C to 85°C	1.04	1.08	1.12	V
		TPS312xG15		1.35	1.40	1.45	
		TPS312xJ18		1.56	1.62	1.68	
		TPS312xL30		2.57	2.64	2.71	
		TPS312xE12		1.10	1.14	1.18	
		TPS312xE15		1.38	1.43	1.48	
		TPS312xE18		1.65	1.71	1.77	
V <sub>hys</sub>	Hysteresis at V <sub>DD</sub> input	1 V < V <sub>IT-</sub> < 1.4 V		15		mV	
		1.4 V < V <sub>IT-</sub> < 2 V		20			
		2 V < V <sub>IT-</sub> < 3 V		30			

(1) To ensure best stability of the threshold voltage, a bypass capacitor (ceramic, 0.1 μF) should be placed near the supply terminal.

## ELECTRICAL CHARACTERISTICS (continued)

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

PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNIT
$I_{DD}$	Supply current	TPS3123-xx TPS3124-xx TPS3128-xx	$WDI = V_{DD}$ , $\overline{MR}$ unconnected	$V_{DD} = 0.75\text{ V}$	14		$\mu\text{A}$
				$V_{DD} = 3.3\text{ V}$	22	30	
		TPS3125-xx TPS3126-xx (2)	$\overline{MR}$ unconnected	$V_{DD} = 0.75\text{ V}$	14		
				$V_{DD} = 3.3\text{ V}$	18	25	
$C_i$	Input capacitance at $\overline{MR}$ , WDI	$V_i = 0\text{ V to }3.3\text{ V}$		5			pF

(2) The supply current during delay time  $t_d$  is typical 5  $\mu\text{A}$  higher.

## TIMING REQUIREMENTS

at  $R_L = 1\text{ M}\Omega$ ,  $C_L = 50\text{ pF}$ ,  $T_A = 25^\circ\text{C}$

PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNIT
$t_w$	Pulse width	At $V_{DD}$	$V_{IH} = V_{IT-} + 0.2\text{ V}$ , $V_{IL} = V_{IT-} - 0.2\text{ V}$	6			$\mu\text{s}$
		At $\overline{MR}$	$V_{DD} \geq V_{IT-} + 0.2\text{ V}$ , $V_{IL} = 0.3 \times V_{DD}$ , $V_{IH} = 0.7 \times V_{DD}$	1			
		At WDI		0.1			

## SWITCHING CHARACTERISTICS

at  $R_L = 1\text{ M}\Omega$ ,  $C_L = 50\text{ pF}$ ,  $T_A = 25^\circ\text{C}$

PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNIT
$t_{out}$	Watchdog time out	$V_{DD} \geq V_{IT-} + 0.2\text{ V}$ , See timing diagram		0.8	1.4	2.1	s
$t_d$	Delay time	$V_{DD} > V_{IT-} + 0.2\text{ V}$ , See timing diagram		100	180	260	ms
$t_{PHL}$	Propagation delay time, high-to-low-level output	$\overline{MR}$ to $\overline{RESET}$ delay (TPS3123/5/6/8)	$V_{DD} \geq V_{IT-} + 0.2\text{ V}$ , $V_{IL} = 0.2 \times V_{DD}$ , $V_{IH} = 0.8 \times V_{DD}$			0.1	$\mu\text{s}$
$t_{PLH}$	Propagation delay time, low-to-high-level output	$\overline{MR}$ to $\overline{RESET}$ delay (TPS3125/6)				0.1	
$t_{PHL}$	Propagation delay time, high-to-low-level output	$V_{DD}$ to $\overline{RESET}$ delay				10	$\mu\text{s}$
$t_{PLH}$	Propagation delay time, low-to-high-level output	$V_{DD}$ to $\overline{RESET}$ delay (TPS3124/5/6)		$V_{IL} = V_{IT-} - 0.2\text{ V}$ , $V_{IH} = V_{IT-} + 0.2\text{ V}$		10	

TYPICAL CHARACTERISTICS

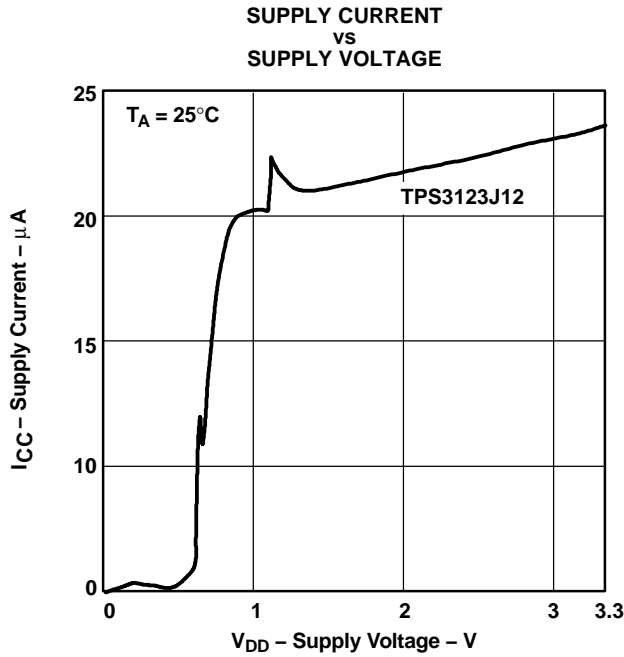


Figure 2.

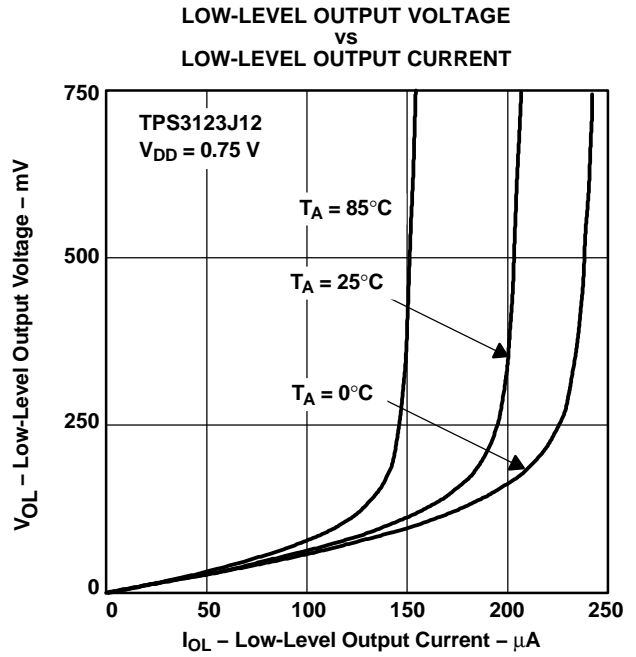


Figure 3.

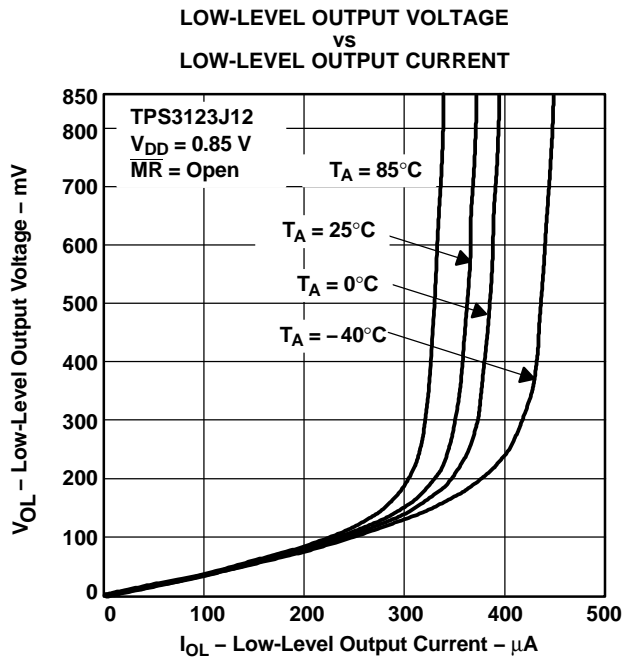


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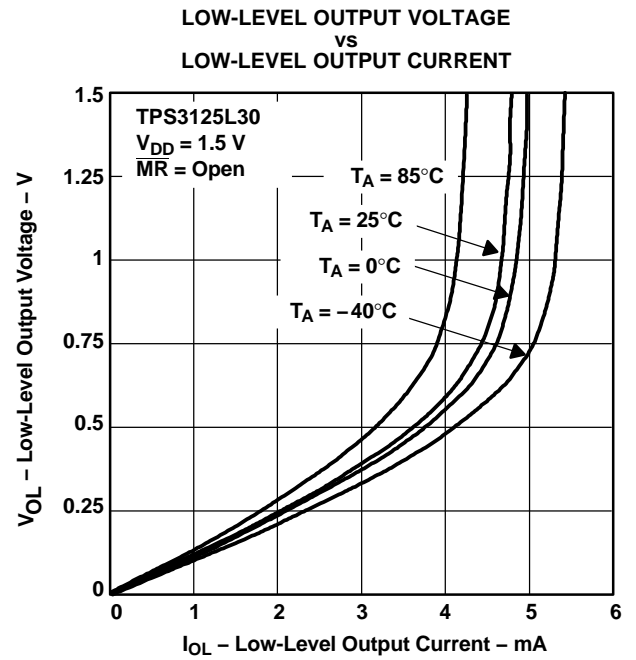


Figure 5.



**TYPICAL CHARACTERISTICS (continued)**

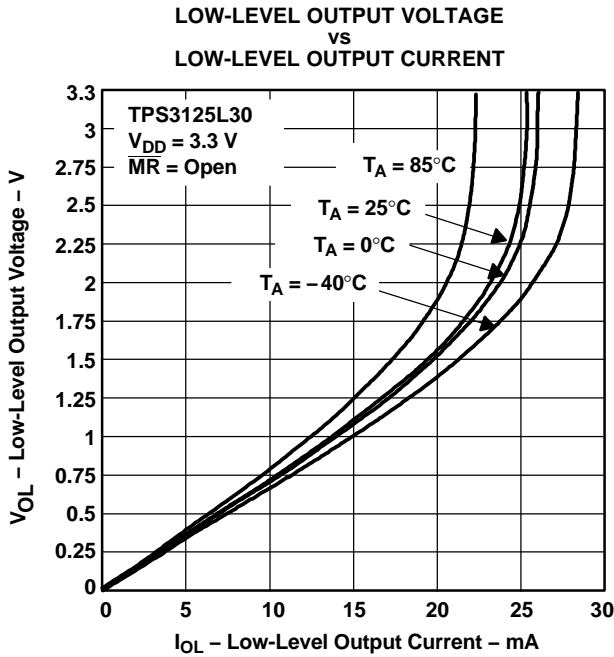


Figure 6.

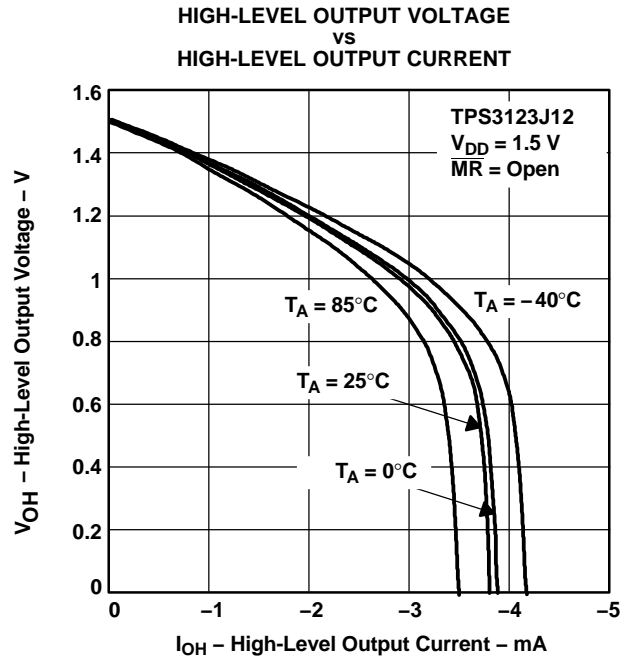


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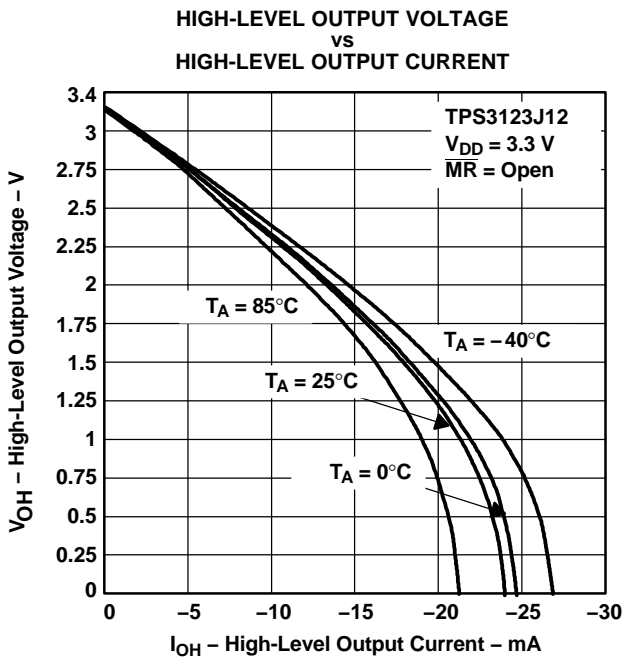


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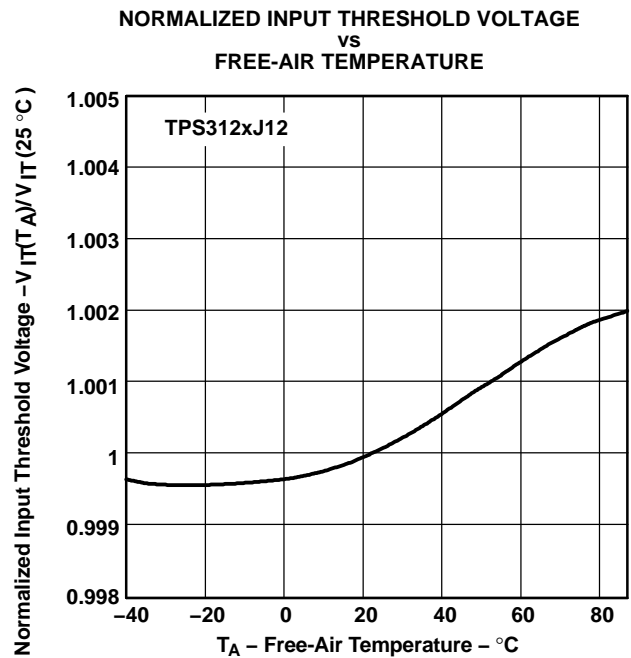


Figure 9.

**TYPICAL CHARACTERISTICS (continued)**

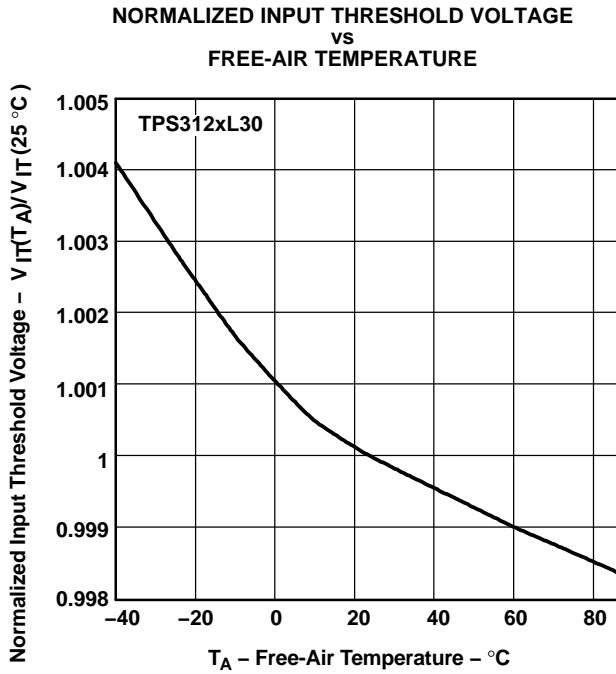


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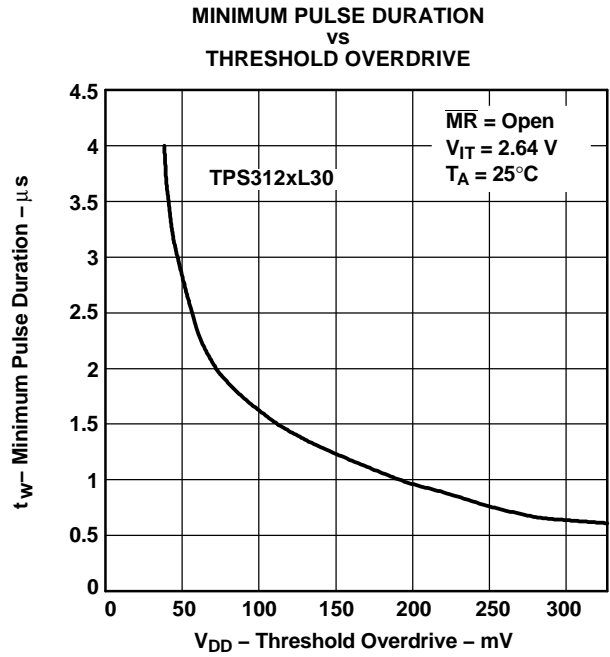


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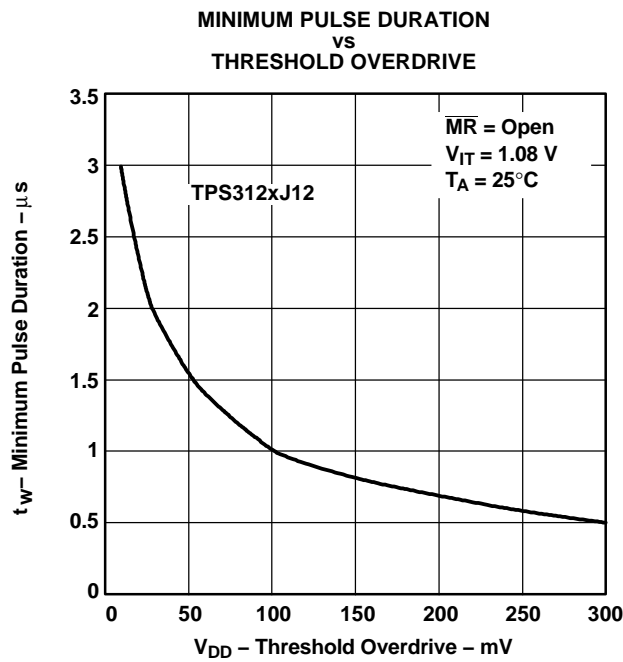


Figure 12.

## PACKAGING INFORMATION

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
TPS3123G15DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123G15DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123G15DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123G15DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123J12DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123J12DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123J12DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123J12DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123J18DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123J18DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123J18DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3123J18DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124G15DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124G15DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124G15DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124G15DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124J12DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124J12DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124J12DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124J12DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124J18DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124J18DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124J18DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3124J18DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125G15DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
TPS3125G15DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125G15DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125J12DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125J12DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125J12DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125J12DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125J18DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125J18DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125J18DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125J18DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125L30DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125L30DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125L30DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3125L30DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E12DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E12DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E12DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E12DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E15DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E15DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E15DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E15DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E18DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E18DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E18DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3126E18DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
TPS3128E12DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E12DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E12DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E12DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E15DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E15DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E15DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E15DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E18DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E18DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E18DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
TPS3128E18DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

<sup>(1)</sup> 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.

**OBSELETE:** TI has discontinued the production of the device.

<sup>(2)</sup> 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)

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

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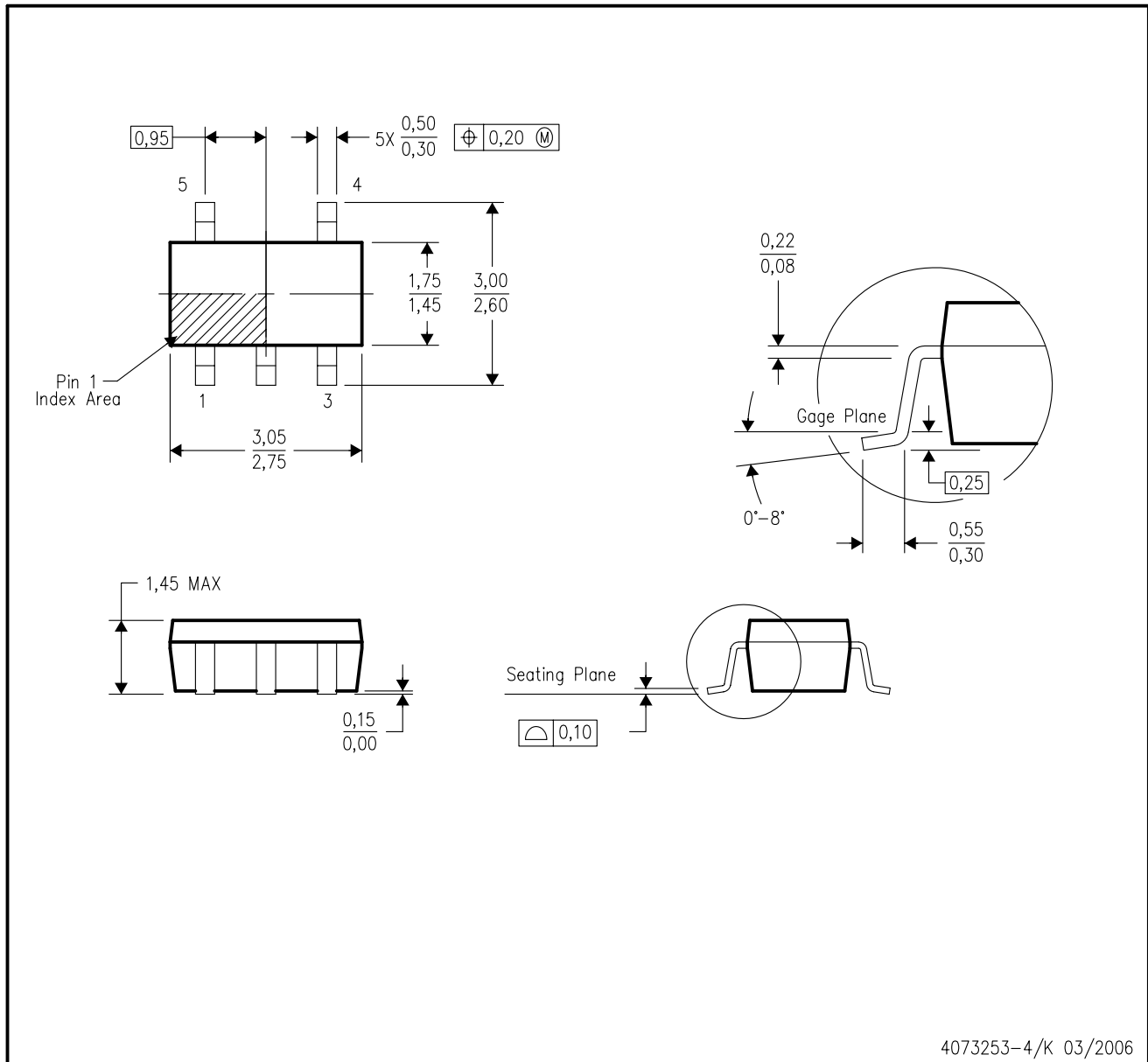
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# MECHANICAL DATA

DBV (R-PDSO-G5)

PLASTIC SMALL-OUTLINE PACKAGE



- NOTES:
- All linear dimensions are in millimeters.
  - This drawing is subject to change without notice.
  - Body dimensions do not include mold flash or protrusion. Mold flash and protrusion shall not exceed 0.15 per side.
  - Falls within JEDEC MO-178 Variation AA.

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