Toshiba Semiconductor Lead(Pb)-Free[(1)] Plan for Discrete Device (TST/TEM/TSW/TSG Products)

Production Facilities Located Outside of Japan

March 30, 2005
Toshiba Corporation Semiconductor Company
Discrete Semiconductor Div.

Toshiba Semiconductor (Thailand) Co., Ltd. (TST)

Product Category	Product Type	Package Type		Finish Specification (Lead(Pb)-contained)	Finish specification (Lead(Pb)-Free) (1)	Plan of mass producton time	The second digit from the end of ADD-code (6)	Packing label display
Discrete Semiconductor	Small Signal Transistor / Diode	TO-92		Sn-Pb (dip)	Sn-Ag-Cu (dip)	Under mass production	F	Lead (Pb)-Free (1)
		S-Mini		Sn-Pb (dip)	Pure Sn (plating)	May-05	F	Lead (Pb)-Free
					Sn-Ag-Cu (dip)	Under mass production	F	Lead (Pb)-Free
		N-Mini		Sn-Pb (dip)	Sn-Ag-Cu (dip)	Under mass production	F	Lead (Pb)-Free
		SMV		Sn-Pb (dip)	Pure Sn (plating)	May-05	F	Lead (Pb)-Free
					Sn-Ag-Cu (dip)	Under mass production	F	Lead (Pb)-Free
		SM6		Sn-Pb (dip)	Pure Sn (plating)	May-05	F	Lead (Pb)-Free
					Sn-Ag-Cu (dip)	Under mass production	F	Lead (Pb)-Free
		USV		Sn-Pb (plating)	Pure Sn (plating)	Under mass production	F	Lead (Pb)-Free
		US6		Sn-Pb (plating)	Pure Sn (plating)	Under mass production	F	Lead (Pb)-Free
		ESC		Sn-Pb (plating)	Pure Sn (plating)	Under mass production	F	Lead (Pb)-Free
		SSM		Sn-Pb (plating)	Pure Sn (plating)	Under mass production	F	Lead (Pb)-Free
	Transistor	TO-220NIS		Sn-Pb (dip)	Sn-Ag-Cu (dip)	Under mass production	F or Q	Lead (Pb)-Free or Lead(Pb)-Free Finish(3)
		TO-3P(N)		Sn-Pb (dip)	Sn-Ag-Cu (dip)	Under mass production	F or Q	Lead (Pb)-Free or Lead(Pb)-Free Finish
	TOSLINK Coupler	Photo Coupler	DIP (Face to face structure)	Sn-Pb (dip)	Ni/Pd/Au	Under mass production	F	Lead (Pb)-Free
		Photo Coupler	MF SOP(Reflective structure)	Sn-Pb (dip)	Sn-Ag-Cu (dip)	Under mass production	F	Lead (Pb)-Free
		TOSLINK	Module for audio	Sn-Ag-Cu (dip)	Sn-Ag-Cu (dip)	Under mass production	F	Lead (Pb)-Free

Toshiba Electronics Malaysia Sdn. Bhd. (TEM)

Product Category	Product Type	Package Type (4)	Finish Specification (Lead(Pb)-Contained)	Finish specification (Lead(Pb)-Free) (1)	Plan of mass producton time (5)	The second digit from the end of ADD-code (6)	Packing label display
Discrete Semiconductor	Standard CMOS Logic	DIP	Sn-Pb(plating)	Pure-Sn(plating)	Under mass production	F	Lead(Pb)-Free
		SOP	Sn-Pb(plating)	Ni/Pd/Au	Under mass production	F	Lead(Pb)-Free
		TSSOP	Ni/Pd/Au	Ni/Pd/Au	Under mass production	-	Lead(Pb)-Free
		USC	Sn-Pb(dip)	Pure Sn (plating)	May-05	F	Lead(Pb)-Free
				Sn-Ag-Cu(dip)	Under mass production	F	Lead(Pb)-Free
	Small Signal Transistor/ Diode	USM	Sn-Pb(dip)	Completed. (transferred to TSW)	-	-	-
		S-MINI	Sn-Pb(dip)	Completed. (transferred to TST)	-	-	-
		N-MINI	Sn-Pb(dip)	Completed. (transferred to TST)	-	-	-
	Power Device Transistor	SOP8	-	Pure-Sn(plating)	Under mass production	Q	Lead(Pb)-Free Finish
		LSTM	Sn-Pb(dip)	Sn-Ag-Cu(dip)	Under mass production	F	Lead(Pb)-Free
		TO-220NIS	Sn-Pb(dip)	Sn-Ag-Cu(dip)	Under mass production	F or Q	Lead(Pb)-Free or Lead(Pb)-Free Finish
		TO-3P(H)IS	Sn-Pb(dip)	Sn-Ag-Cu(dip)	Under mass production	F or Q	Lead(Pb)-Free or Lead(Pb)-Free Finish

Toshiba Semiconductor (WUXI) Co., Ltd. (TSW)

Product Category	Product Type	Package Type (4)	Finish Specification (Lead(Pb)-Contained)	Finish specification (Lead(Pb)-Free) (1)	Plan of mass producton time (5)	The second digit from the end of ADD-code	Packing label display
Discrete Semiconductor	Small Signal	USM	-	Pure-Sn(plating)	May-05	F	Lead(Pb)-Free
				Sn-Ag-Cu(dip)	Under mass production	F	Lead(Pb)-Free
	Power Device	TO126(IS)	-	Sn-Ag-Cu(dip)	Under mass production	Q	Lead(Pb)-Free Finish

Toshiba Semiconductor G.m.b.H. (TSG)

Product Category	Product Type	Package Type (4)		Finish Specification (Lead(Pb)-contained)	Finish specification (Lead(Pb)-Free)	Plan of mass producton time (5)	The second digit from the end of ADD-code (6)	Packing label display
	Opto-Device	LED	Large Size SMD Lamp	Ni/Pd/Au (plating)	Ni/Pd/Au (plating)	Under mass production	-	Lead(Pb)-Free

(1) Lead(Pb)-Free - Toshiba Semiconductor Company defines “Lead(Pb)-Free” as no more than 0.1 percent lead(Pb) by weight in Homogenous Materials(2). This does not mean that Toshiba products labeled "Lead(Pb)-Free" are entirely free of lead(Pb).
(2) Homogenous Material – Toshiba Semiconductor Company defines the term “Homogonous Material” to mean a material that cannot be mechanically disjointed into different materials. The term “homogenous” is understood as “of uniform composition throughout,” so examples of “Homogenous Materials” would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings. ToshibaSemiconductor Company defines the term “mechanically disjointed” to mean that the materials can be, in principle, separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.
(3) During a transitional phase, in addition to Lead(Pb)-Free products (that contain no more than 0.1 percent lead(Pb) by weight) Toshiba Semiconductor Company and TAEC will also offer products that have Lead(Pb)-Free terminals, which will be referred to as "Lead(Pb)-Free Finish." The Lead(Pb)-Free Finish products may contain greater than 0.1 percent lead(Pb) by weight in portions of the product other than the terminals.
(4) Devices are sorted by product category
(5) Lead(Pb)-Free will be implemented ahead of this schedule for some products . Please ask your local sales representative for details.
(6) For new Lead(Pb)-Free versions of existing products (except for some Lead(Pb)-Free Finish products already in mass-production), Toshiba Semiconductor Company will add either an F or Q to the end of the Add-code after the product type. "F" designates devices in which the entire product is Lead(Pb)-Free; "Q" designates Lead(Pb)-Free Finish devices in which only the terminals are Lead(Pb)-Free.