



## PRODUCTS

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## IT-859GTABS/IT-859GTA

### **Metal Base Laminate & Prepreg with Halogen Free Multifunctional Filled and Reinforced Epoxy**

*IT-859GTA is a Tg of 100 °C (by DSC) halogen free multifunctional filled epoxy with metal base and glass fabric reinforced laminate. It has good thermal conductivity of 3W/mK. It also provide high thermal reliability and can pass 260 °C Lead free assembly.*

### **Key Features =====**

#### **Advanced Resin Technology**

*Industrial standard material with Tg of 100 °C ( by DSC) halogen free multifunctional filled epoxy resin and excellent thermal reliability.*

#### **Heat Management Technology**

*Excellent thermal conductivity of 3W/mK (based on Laird 1KA04 as reference).*

*Thermal impedance measurement is follow industrial ASTM D5470 standard and referenced to Laird 1KA04.*

#### **Lead-Free Assembly Compatible**

*RoHS compliant and suitable for high thermal reliability needs, and allow Lead free assemblies with a maximum reflow temperature of 260 °C.*

#### **Available in Variety of Constructions**

*Available in a various of constructions (single side or double side), copper weights (0.5 to 6 oz). Various aluminum styles (1050, 5052, 6061) and thickness (0.6 to 3.0mm) are all available.*

### **Applications**

**Notebook Light Bar**

**LED Lighting Application**

**LCD TV Light Bar**

**Automobile Lighting**

**Traffic Lighting**

**Street Lamp and Lighting**

### **Industrial Approval**

**UL 94 V-0**

**IPC-4101C Spec / 21 for Reference**

**RoHS Compliant**

LAMINATE (IT-859GTA)						
Property	Thickness < 0.50 mm [0.0197 in]		Thickness ≥ 0.50 mm [0.0197 in]		Units	Test Method
	Typical Value	Spec	Typical Value	Spec	Metric (English)	IPC-TM-650 (or as noted)
Peel Strength, minimum A. Low profile copper foil and very low profile copper foil - all copper weights > 17µm [0.669 mil] B. Standard profile copper foil 1. After Thermal Stress 2. At 125°C [257 F] 3. After Process Solutions	0.87(5.0)  1.22(7.0) 1.05(6.0) 1.05(6.0)	0.70(4.0)  0.80 (4.57) 0.70 (4.00) 0.55 (3.14)	0.87(5.0)  1.22(7.0) 1.05(6.0) 1.05(6.0)	0.70(4.0)  1.05 (6.00) 0.70 (4.00) 0.80 (4.57)	N/mm (lb/inch)	2.4.8 2.4.8.2 2.4.8.3
Volume Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125	10 <sup>10</sup> -- 10 <sup>10</sup>	10 <sup>6</sup> -- 10 <sup>3</sup>	-- 10 <sup>10</sup> 10 <sup>10</sup>	-- 10 <sup>6</sup> 10 <sup>3</sup>	MΩ-cm	2.5.17.1
Surface Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125	10 <sup>10</sup> - 10 <sup>10</sup>	10 <sup>4</sup> -- 10 <sup>3</sup>	- 10 <sup>10</sup> 10 <sup>10</sup>	--- 10 <sup>4</sup> 10 <sup>3</sup>	MΩ	2.5.17.1
Moisture Absorption, maximum	--	--	0.10	0.8	%	2.6.2.1
Dielectric Breakdown, minimum	--	--	50	--	kV	2.5.6
Permittivity at 1 MHz, maximum (Laminate & Laminated Prepreg)	4.8	5.4	4.8	5.4	--	2.5.5.9
Loss Tangent at 1 MHz, maximum (Laminate & Laminated Prepreg)	0.018	0.035	0.018	0.035	--	2.5.5.9
Flexural Strength, minimum A. Length direction B. Cross direction	-- -- -- --	-- -- -- --	480 (70,000) 450 (65,400)	415 (60,190) 345 (50,140)	N/mm <sup>2</sup> (lb/in <sup>2</sup> )	2.4.4
Arc Resistance, minimum	100	60	100	60	S	2.5.1
Thermal Stress 10 s at 288°C [550.4F], minimum A. Unetched B. Etched	Pass Pass	Pass Visual Pass Visual	Pass Pass	Pass Visual Pass Visual	Rating	2.4.13.1
Electric Strength, minimum (Laminate & Laminated Prepreg)	1000	--	--	--	Volts/mil	2.5.6.2
Dielectric Withstand Voltage (Hi-Pot)	1000	500	--	--	VDC/mil	2.5.7.2
Dielectric Withstand Voltage (Hi-Pot)	500	250	--	--	VAC/mil	2.5.7.2
Flammability (Laminate & Laminated Prepreg)	V-0	V-0	V-0	V-0	Rating	UL94
Glass Transition Temperature (DSC)	105	100	105	100	°C	2.4.25
Decomposition Temperature	--	--	380	360	°C	2.4.24.6 (5% wt loss)
X/Y Axis CTE (40°C to 125°C)	--	--	9-11	--	ppm/°C	2.4.24
Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 Degrees C	-- -- --	-- -- --	40 250 3.5	-- -- --	ppm/°C ppm/°C %	2.4.24
Thermal Resistance A. T260 B. T288	-- --	-- --	>60 >60	30 minimum 15 minimum	Minutes Minutes	2.4.24.1

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