



Halogen-free

Laminate

R-156AS R-156YS

Prepreg

R-155AS R-155YS

Highly heat-resistant Halogen-free multi-layer circuit board materials

Added highly heat-resistant and tracking resistance to automotive quality R-1566 to improve the reliability of ECU boards used under severe conditions.

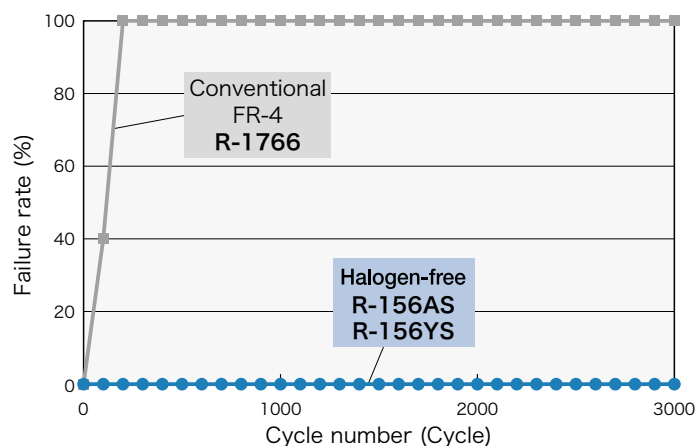


T_g(DSC) 175°C
T_d(TGA) 355°C
CTI ≥ 600V
(R-156AS*, R-156YS)

*Thickness: 0.8mm or less

Applications
Automotive
 Automotive ECU, Automotive module, HEV/EV power control unit, DC/DC converter board, etc.

Through-hole reliability

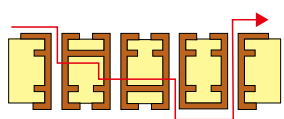


Condition

Cycle condition	-40°C (15min) ⇄ 160°C (15min)
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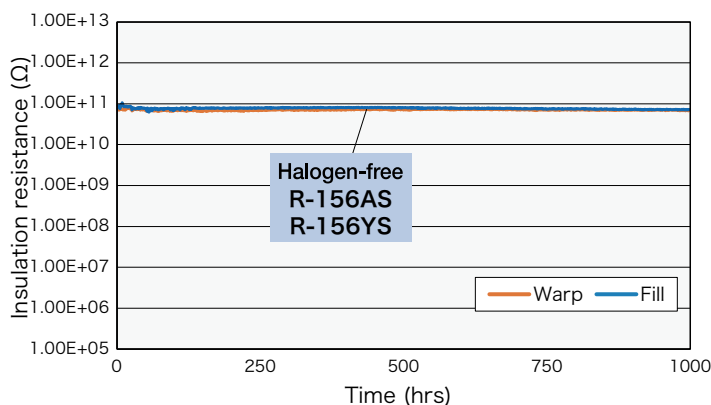
* Failure is over 10% changes of resistance
 * 260°C Peak reflow x 3times as pretreatment

Construction



Through-hole reliability

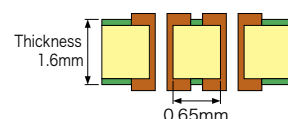
High voltage CAF evaluation



Condition

Pretreatment	260°C Peak reflow x 3times
Condition	85°C 85%RH DC 350V
Through-hole wall to wall distance	0.65mm

Construction



General properties

Item	Test method	Condition	Unit	Halogen-free R-156AS	Halogen-free R-156YS	Conventional Halogen-free R-1566(W)
Glass transition temp. (T _g)	DSC	A	°C	175		148
	TMA			170		145
Thermal decomposition temp.(T _d)	TGA	A	°C	355		350
CTE z-axis	α 1	IPC-TM-650 2.4.24	ppm/°C	40		40
				180		180
T288(with copper)	IPC-TM-650 2.4.24.1	A	min	10		3
Peel strength	1oz(35μm)	IPC-TM-650 2.4.8	A	1.6		1.8
Flammability	UL Method	C-48/23/50	—	94V-0*1	94V-1	94V-0

The sample thickness is 0.8mm.

*1 Thickness: 0.8mm maximum

[Please see our website for Notes before you use.](#)

industrial.panasonic.com/www/electronic-materials

Panasonic Industry R-156AS

Our Halogen-free materials are based on JPCA-ES-01-2003 standard and others.

The above data are typical values and not guaranteed values.

Panasonic Industry Co., Ltd. Electronic Materials Business Division

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