

CTI $\geq$ 600V
(R-356AD*1, R-356YD)

RTI 150°C
(R-356AD*2, R-356YD*3)

High voltage CAF resistance (1000V)

The sample thickness *1: 0.8mm or less, *2: 0.8mm, *3: 0.63mm or more

Applications
Automotive/Industry
On Board Charger, DC/DC Converter, Inverter, In-Wheel Motor, etc.
EV Charging Stand, HV Control Unit, PV Module, etc.



Halogen-free

Laminate

R-356AD R-356YD

Prepreg

R-355AD R-355YD

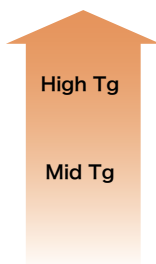
Highly heat-resistant halogen-free multi-layer circuit board materials

Supports Highly heat-resistant and high withstand voltage required for xEV and Industrial Devices.

Support in reduction of PCB board size due to reduced creepage distances by excellent tracking resistance.

Halogen-free Material reducing environmental impact.

Line-up



R-1755V Tg: 173°C	R-1755D Tg: 163°C		R-156AS • R-156YS R-356AD • R-356YD Tg: 175°C
R-1755M Tg: 153°C			
	R-1755E Tg: 133°C	R-1566(W),(WN) Tg: 148°C	

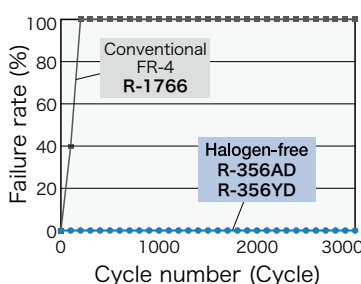
PLC=3
175 $\leq$ CTI<250V

PLC=2
250 $\leq$ CTI<400V

PLC=1
400 $\leq$ CTI<600V

PLC=0
600 $\leq$ CTI

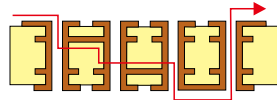
Through-hole reliability



Condition

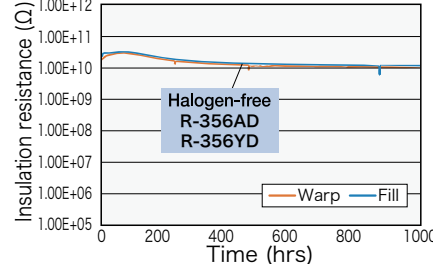
Cycle condition	-40°C (15min) $\leftrightarrow$ 160°C (15min)
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Construction



Insulation reliability

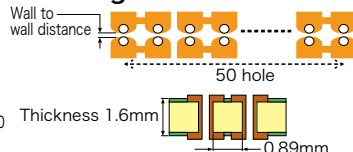
High voltage CAF evaluation



Condition

Pretreatment	260°C Peak reflow x 3 times
Condition	85°C, 85%RH, DC 1000V
Through-hole wall to wall distance	0.89mm

TV Design



General properties

Item	試験方法	条件	単位	Halogen-free R-356AD	Halogen-free R-356YD	Conventional Halogen-free R-1566(W)
Glass transition temp.(Tg)	DSC	A	°C	175		148
	TMA			170		145
Thermal decomposition temp.(Td)	TGA	A	°C	355		350
T288(with copper)	IPC-TM-650 2.4.24.1	A	min	10		3
CTE z-axis $\alpha 1 / \alpha 2$	IPC-TM-650 2.4.24	A	ppm/°C	40 / 180		40 / 180
RTI / PLC	UL Method	C-48/23/50	—	150*1 / 0*3	150*2 / 0	130 / 1
Peel strength 1oz(35μm)	IPC-TM-650 2.4.8	A	kN/m	1.6		1.8
Flammability	UL Method	C-48/23/50	—	94V-0*3	94V-1	94V-0

The sample thickness is 0.8mm.

*1 Thickness is 0.8mm *2 Thickness is 0.63mm or more *3 Thickness is 0.8mm or less

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

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

The above data are typical values and not guaranteed values.

industrial.panasonic.com/www/electronic-materials

Panasonic Industry R-356AD

Panasonic Industry Co., Ltd. Electronic Materials Business Division

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