



明光瑞智电子科技有限公司

MGRZ Electronic Technology Co. Ltd.

# MGRZ-668

For Halogen free & Lead-free Product Tg 160°C

Item	Test method	Test condition	Unit	Laminate		
	IPC-TM-650			IPC Spec.	Typical Value	
Glass transition temp.	2.4.25	DSC	°C	Min. 150	160	
CTE, X-, Y-axis	2.4.24	Pre-Tg, TMA	ppm/°C	—	12/15	
CTE, Z-axis	2.4.24	Alpha 1, TMA	ppm/°C	Max. 60	39	
		Alpha 2, TMA	ppm/°C	Max. 300	203	
Z-axis expansion	2.4.24	50~260°C, TMA	%	Max. 3.5	2.63	
Decomposition temp.	2.4.24.26	TGA	°C	Min. 325	382	
Thermal resistance (Copper removed)	2.4.24.1	T260	minutes	Min. 30	>60	
		T288	minutes	Min.5	>60	
Water absorption	2.6.2.1	E-1/105+D-24/23	%	Max. 0.5	0.12	
Peel strength	1 OZ	2.4.8	As received	lb/in	Min. 6	10
			After thermal stress	lb/in	Min. 6	10
Permittivity (RC 50%)	1 MHz	2.5.5.9	C-24/23/50	—	Max. 5.4	4.7
	1 GHz					4.4
Loss tangent (RC 50%)	1 MHz	2.5.5.9	C-24/23/50	—	Max. 0.035	0.010
	1 GHz					0.010
Flame resistance	UL-94	A&E-24/125	—	Min. V-0	V-0	