

























Metal Can Type Crystals

Series	Photo	Dimension	Lead Connection		Frequency Range	Vibration Mode		Green Products
						Fund.	3rd.	
9B		HC-495	2 leads		3.2 ~ 90MHz	V	V	RoHS Compliant
9C		HC-495 SMD	2 flattened leads		3.2 ~ 90MHz	V	V	RoHS Compliant









SMD Glass Sealing Crystals

Series	Photo	Dimension	Lead Connection		Frequency Range	Vibration Mode		Green Products
						Fund.	3rd.	
7A		5.0 x 3.2 x 1.2 mm	2 pads		8 ~ 54MHz	V		Exempted by RoHS directive
7V		3.2 x 2.5 x 0.8 mm	4 pads		9.9 ~ 54MHz	V		Exempted by RoHS directive
7S		2.5 x 2.0 x 0.75 mm	4 pads		12 ~ 64MHz	V		Exempted by RoHS directive





SMD Seam Sealing Crystals

Series	Photo	Dimension	Lead Connection		Frequency Range	Vibration Mode		Green Products
						Fund.	3rd.	
7B		5.0 x 3.2 x 0.9 mm	4 pads		8 ~ 125MHz	V	V	RoHS Compliant
7M		3.2 x 2.5 x 0.7 mm	4 pads		10 ~ 64MHz	V		RoHS Compliant
8Z		2.5 x 2.0 x 0.55 mm	4 pads		12 ~ 54MHz	V		RoHS Compliant
8Y		2.0 x 1.6 x 0.5 mm	4 pads		16 ~ 54MHz	V		RoHS Compliant
8H		2.0 x 1.6 x 0.35 mm	4 pads		16 ~ 54MHz	V		RoHS Compliant
8Q		1.6 x 1.2 x 0.35 mm	4 pads		24 ~ 54MHz	V		RoHS Compliant
8J		1.2 x 1.0 x 0.30 mm	4 pads		36 ~ 54MHz	V		RoHS Compliant

SMD kHz Crystals

Series	Photo	Dimension	Lead Connection	Frequency Range	Package Type	Green Products	
9H T7		6.9 x 1.4 x 1.4 mm	2 pads		32.768kHz	Plastic Mold	RoHS Compliant
9H T10		3.2 x 1.5 x 0.75 mm	2 pads		32.768kHz	Ceramic	RoHS Compliant
9H T11		2.0 x 1.2 x 0.6 mm	2 pads		32.768kHz	Ceramic	RoHS Compliant
9H T12		1.6 x 1.0 x 0.5 mm	2 pads		32.768kHz	Ceramic	RoHS Compliant





SMD Seam Temperature Sensing Crystals

Series	Photo	Dimension	Lead Connection		Frequency Range	Vibration Mode		Green Products
						Fund.	3rd.	
OZ		2.5 x 2.0 x 1.0 mm	4 pads		12 ~ 54MHz	V		RoHS Compliant
OY		2.0 x 1.6 x 0.8 mm	4 pads		19.2 ~ 54MHz	V		RoHS Compliant




SMD Crystal Oscillators-CMOS Output

Series	Photo	Dimension	Voltage					Frequency Range	Oscillation Type	Green Products
			5.0	3.3	2.8	2.5	1.8			
7J		14.0 x 9.0 x 5.4 mm	V	V	V	V	V	1 ~ 170MHz	Fund. / 3rd OT	RoHS Compliant
7W		7.0 x 5.0 x 1.3 mm	V	V	V	V	V	1 ~ 170MHz	Fund. / 3rd OT	RoHS Compliant





SMD Crystal Oscillators-CMOS Output

Series	Photo	Dimension	Voltage					Frequency Range	Oscillation Type	Green Products
			5.0	3.3	2.8	2.5	1.8			
7C		5.0 x 3.2 x 1.2 mm	V	V	V	V	V	1 – 150MHz	Fund. / 3rd OT	RoHS Compliant
7X		3.2 x 2.5 x 1.0 mm		V	V	V	V	1 – 125MHz	Fund. / 3rd OT	RoHS Compliant
8W		2.5 x 2.0 x 0.8 mm		V		V	V	4 – 75MHz	Fundamental	RoHS Compliant
8N		2.0 x 1.6 x 0.75 mm		V		V	V	4 – 54MHz	Fundamental	RoHS Compliant






SMD kHz Crystal Oscillators

Series	Photo	Dimension	Voltage					Frequency Range	Oscillation Type	Green Products
			5.0	3.3	2.8	2.5	1.8			
7WZ		7.0 x 5.0 x 1.3 mm		V	V	V	V	32.768 kHz	AT Crystal Based	RoHS Compliant
7CZ		5.0 x 3.2 x 1.2 mm		V	V	V		32.768 kHz	AT Crystal Based	RoHS Compliant
7XZ		3.2 x 2.5 x 1.0 mm		V	V			32.768 kHz	AT Crystal Based	RoHS Compliant


SMD MEMS Oscillators - CMOS Output

Series	Photo	Dimension	Voltage					Frequency Range	Green Products
			5.0	3.3	2.8	2.5	1.8		
TA		7.0 x 5.0 x 0.9 mm		V	V	V	V	1 – 150MHz	RoHS Compliant
TB		5.0 x 3.2 x 0.75 mm		V	V	V	V	1 – 150MHz	RoHS Compliant
TC		3.2 x 2.5 x 0.75 mm		V	V	V	V	1 – 150MHz	RoHS Compliant
TD		2.5 x 2.0 x 0.75 mm		V	V	V	V	1 – 150MHz	RoHS Compliant





SMD Crystal Oscillators - Differential Output

Series	Photo	Dimension	Output	Voltage			Frequency Range	Oscillation Type	Green Products
				5.0	3.3	2.5			
7J		14.0 x 9.0 x 5.4 mm	LVPECL LVDS		V	V	25 – 700MHz	3rd Overtone Fundamental PLL	RoHS Compliant
BA		7.0 x 5.0 x 1.3 mm	LVPECL		V	V	25 – 200MHz	Fundamental	RoHS Compliant
BB		7.0 x 5.0 x 1.3 mm	LVPECL		V	V	25 – 200MHz	3rd Overtone	RoHS Compliant
BC		7.0 x 5.0 x 1.3 mm	LVPECL		V	V	75 – 700MHz	PLL	RoHS Compliant
BE		7.0 x 5.0 x 1.3 mm	LVDS		V	V	25 – 200MHz	Fundamental	RoHS Compliant
BF		7.0 x 5.0 x 1.3 mm	LVDS		V	V	25 – 200MHz	3rd Overtone	RoHS Compliant
BG		7.0 x 5.0 x 1.3 mm	LVDS		V	V	75 – 700MHz	PLL	RoHS Compliant
BX		7.0 x 5.0 x 1.3 mm	HCSL		V	V	25 – 200MHz	3rd Overtone	RoHS Compliant
CA		5.0 x 3.2 x 1.2 mm	LVPECL		V	V	25 – 200MHz	Fundamental	RoHS Compliant
CB		5.0 x 3.2 x 1.2 mm	LVPECL		V	V	25 – 200MHz	3rd Overtone	RoHS Compliant
CE		5.0 x 3.2 x 1.2 mm	LVDS		V	V	25 – 200MHz	Fundamental	RoHS Compliant
CF		5.0 x 3.2 x 1.2 mm	LVDS		V	V	25 – 200MHz	3rd Overtone	RoHS Compliant
CX		5.0 x 3.2 x 1.2 mm	HCSL		V	V	25 – 200MHz	3rd Overtone	RoHS Compliant
DA		3.2 x 2.5 x 0.95 mm	LVPECL		V	V	25 – 200MHz	Fundamental	RoHS Compliant













SMD Crystal Oscillators - Differential Output

Series	Photo	Dimension	Output	Voltage			Frequency Range	Oscillation Type	Green Products
				5.0	3.3	2.5			
DB		3.2 x 2.5 x 0.95 mm	LVPECL		V	V	25 ~ 200MHz	3rd Overtone	RoHS Compliant
DE		3.2 x 2.5 x 0.95 mm	LVDS		V	V	25 ~ 200MHz	Fundamental	RoHS Compliant
DF		3.2 x 2.5 x 0.95 mm	LVDS		V	V	25 ~ 200MHz	3rd Overtone	RoHS Compliant
DH		3.2 x 2.5 x 0.95 mm	HCSL		V	V	25 ~ 200MHz	3rd Overtone	RoHS Compliant




SMD SAW Oscillators - Differential Output

Series	Photo	Dimension	Output	Voltage			Frequency Range	Oscillation Type	Green Products
				5.0	3.3	2.5			
BS		7.0 x 5.0 x 1.6 mm	LVPECL (SAW base)		V	V	150 ~ 700MHz	Fundamental	RoHS Compliant
BT		7.0 x 5.0 x 1.6 mm	LVPECL (SAW base)		V	V	150 ~ 700MHz	Fundamental	RoHS Compliant
CS		5.0 x 3.2 x 1.2 mm	LVPECL (SAW base)		V	V	150 ~ 700MHz	Fundamental	RoHS Compliant
CT		5.0 x 3.2 x 1.2 mm	LVPECL (SAW base)		V	V	150 ~ 700MHz	Fundamental	RoHS Compliant

SMD Voltage Controlled Crystal Oscillators (VCXO)

Series	Photo	Dimension	Output	Voltage			Frequency Range	Oscillation Type	Green Products
				5.0	3.3	2.5			
7H		14.0 x 9.0 x 5.4 mm	CMOS LVPECL LVDS		V		50 ~ 700MHz	Fundamental	RoHS Compliant
6U		7.0 x 5.0 x 1.3 mm	CMOS	V	V		1 ~ 59MHz	Fundamental	RoHS Compliant
BR		7.0 x 5.0 x 1.3 mm	CMOS		V		50 ~ 200MHz	Fundamental	RoHS Compliant
BJ		7.0 x 5.0 x 1.3 mm	LVPECL		V		50 ~ 200MHz	Fundamental	RoHS Compliant
BK		7.0 x 5.0 x 1.3 mm	LVPECL		V		60 ~ 700MHz	PLL	RoHS Compliant
BM		7.0 x 5.0 x 1.3 mm	LVPECL		V		200 ~ 700MHz	Multiplier	RoHS Compliant
BN		7.0 x 5.0 x 1.3 mm	LVDS		V		50 ~ 200MHz	Fundamental	RoHS Compliant
BP		7.0 x 5.0 x 1.3 mm	LVDS		V		60 ~ 700MHz	PLL	RoHS Compliant
CN		5.0 x 3.2 x 1.2 mm	LVDS		V		50 ~ 200MHz	Fundamental	RoHS Compliant
CJ		5.0 x 3.2 x 1.2 mm	LVPECL		V		50 ~ 200MHz	Fundamental	RoHS Compliant
CR		5.0 x 3.2 x 1.2 mm	CMOS		V		50 ~ 200MHz	Fundamental	RoHS Compliant
DJ		3.2 x 2.5 x 0.95 mm	LVPECL		V		50 ~ 200MHz	Fundamental	RoHS Compliant
DR		3.2 x 2.5 x 0.95 mm	CMOS		V		50 ~ 200MHz	Fundamental	RoHS Compliant

SMD Temperature Compensated Crystal Oscillators

Series	Photo	Dimension	Output	Voltage			Frequency Range	Oscillation Type	Green Products
				3.2	2.8	1.8			
7Q		3.2 x 2.5 x 1.0 mm	Clipped Sinewave	V	V	V	13 ~ 52MHz	Fundamental	RoHS Compliant
7L		2.5 x 2.0 x 0.8 mm	Clipped Sinewave	V	V	V	13 ~ 52MHz	Fundamental	RoHS Compliant
7Z		2.0 x 1.6 x 0.75 mm	Clipped Sinewave	V	V	V	26 ~ 52MHz	Fundamental	RoHS Compliant
8P		1.6 x 1.2 x 0.6 mm	Clipped Sinewave	V	V	V	26 ~ 52MHz	Fundamental	RoHS Compliant

Precise SMD Temperature Compensated Crystal Oscillators Stratum - 3 Grade

Series	Photo	Dimension	Output	Voltage				Frequency Range	Oscillation Type	Green Products
				5.5	3.3	2.8	2.7			
7P		5.0 x 3.2 x 1.2 mm	CMOS/Clipped Sinewave	V	V	V	V	10 ~ 25MHz	Fundamental	RoHS Compliant







Oven-Controlled Crystal Oscillators

Series	Photo	Dimension	Output	Voltage			Frequency Range	Freq. / Temp. Stability	Green Products
				12	5.0	3.3			
OC		36 x 27mm Typ.	CMOS	V	V		10 ~ 25MHz	+/- 5ppb	RoHS Compliant
OB		25 x 25mm Typ.	CMOS		V	V	10 ~ 25MHz	+/- 10ppb	RoHS Compliant
OA		20 x 20mm Typ.	CMOS		V	V	10 ~ 40MHz	+/- 200ppb	RoHS Compliant







Metal Can Type Crystals - Automotive

Series	Photo	Dimension	Lead Connection	Frequency Range	Vibration Mode		Green Products	
					Fund.	3rd.		
AS		HC-49S	2 leads		4 ~ 62MHz	V		RoHS Compliant
AT		HC-49S SMD	2 flattened leads		4 ~ 62MHz	V		RoHS Compliant

SMD Seam Sealing Crystals - Automotive

Series	Photo	Dimension	Lead Connection	Frequency Range	Vibration Mode		Green Products	
					Fund.	3rd.		
AB		5.0 x 3.2 x 0.9 mm	4 pads		9.5 ~ 40MHz	V		RoHS Compliant
AM		3.2 x 2.5 x 0.7 mm	4 pads		10 ~ 48MHz	V		RoHS Compliant
AZ		2.5 x 2.0 x 0.55 mm	4 pads		16 ~ 74.1MHz	V		RoHS Compliant


SMD Glass Sealing Crystals - Automotive

Series	Photo	Dimension	Lead Connection	Frequency Range	Vibration Mode		Green Products	
					Fund.	3rd.		
AX		8.0 x 4.5 x 1.6 mm	2 pads		6~40MHz	V		Exempted by RoHS directive
AA		5.0 x 3.2 x 1.2 mm	2 pads		8 ~ 48MHz	V		Exempted by RoHS directive
AV		3.2 x 2.5 x 0.8 mm	4 pads		9.84 ~ 54MHz	V		Exempted by RoHS directive

SMD Oscillators - CMOS Output - Automotive

Series	Photo	Dimension	Voltage					Frequency Range	Oscillation Type	Green Products
			3.3	3.0	2.8	2.5	1.8			
AC		5.0 x 3.2 x 1.2 mm	V	V		V	V	1 ~ 70MHz	Fundamental	RoHS Compliant
AU		3.2 x 2.5 x 1.0 mm	V		V	V	V	1 ~ 70MHz	Fundamental	RoHS Compliant
AW		2.5 x 2.0 x 0.8 mm	V	V	V	V	V	4 ~ 54MHz	Fundamental	RoHS Compliant

SMD kHz Crystals Oscillators - Automotive

Series	Photo	Dimension	Voltage					Frequency Range	Oscillation Type	Green Products
			3.3	3.0	2.8	2.5	1.8			
ACZ		5.0 x 3.2 x 1.2 mm	V	V		V	V	32.768kHz	Fundamental	RoHS Compliant
AUZ		3.2 x 2.5 x 1.0 mm	V		V	V	V	32.768kHz	Fundamental	RoHS Compliant

SMD kHz Crystals - Automotive

Series	Photo	Dimension	Lead Connection	Frequency Range	Package Type	Green Products	
AH		3.2 x 1.5 x 0.75 mm	2 pads		32.768kHz	Ceramic	RoHS Compliant