

*SOP variations e.g. TSSOP..

Series IC51 (Clamshell) SOP, TSOP Type I & II

0.5 to 1.27mm Pitch

Specifications

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	-40°C to +150°C (for type PSF) -55°C to +170°C (for type PES & PEI)
Mating Cycles:	10,000 insertions min.

Materials and Finish

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel



Part Number (Details)

IC51 - 028 2 - 334-1 - MF

Series No.

No. of Contact Pins

No. of Sides with Contacts

Design Number

MF = Flanged
Unmarked = Not Flanged

Series IC189 (Open Top) SOP, TSOP Type I & II

0.4 to 1.27mm Pitch

Specifications

Insulation Resistance:	1,000MΩ min. at 100V DC, pitch 0.4, 0.5 1,000MΩ min. at 500V DC, pitch 0.65, 0.8, 1.27
Dielectric Withstanding Voltage:	100V AC for 1 minute, pitch 0.4, 0.5 500V AC for 1 minute, pitch 0.65 700V AC for 1 minute, pitch 0.8, 1.27
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	-40°C to +150°C
Mating Cycles:	10,000 insertions
Contact Force:	20g to 80g per pin

Materials and Finish

Housing:	Polysulphone (PSF), glass-filled Polyethersulphone (PES), glass-filled Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel



Part Number (Details)

IC189 - 016 2 - 019 * - *

Series No.

No. of Contact Pins

Number of Sides
with Contacts

Design Number

Positioning Pin:
N = Without Positioning Pin
P = With Positioning PinProtection Key**
K = With Protection Key
Unmarked = Without Protection Key

**Protection Key: Prevents IC from releasing during transportation

Series IC235 (Open Top) SOP, TSOP Type II

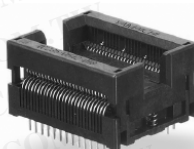
0.8 and 1.27mm Pitch

Specifications

Insulation Resistance:	1,000MΩ min. at 500V DC
Dielectric Withstanding Voltage:	700V AC for 1 minute
Contact Resistance:	30mΩ max. at 10mA/20mV max.
Operating Temperature Range:	-40°C to +150°C
Mating Cycles:	10,000 insertions min.
Contact Force:	20g to 80g per pin

Materials and Finish

Housing:	Polyetherimide (PEI), glass-filled
Contacts:	Beryllium Copper (BeCu)
Plating:	Gold over Nickel



Part Number (Details)

IC235 - 020 2 - 201 - *

Series No.

No. of Contact Pins

Number of Sides
with Contacts

Design Number

Positioning Pin:
N = Without Positioning Pin
P = With Positioning Pin

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Series IC191 (Open Top)
Thin Small Outline Package (TSOP Type I)

0.5mm Pitch

Specifications

Insulation Resistance: 1,000MΩ min. at 500V DC
 Dielectric Withstanding Voltage: 700V AC for 1 minute
 Contact Resistance: 30mΩ max. at 10mA/20mV max.
 Current Rating: 1A max.
 Operating Temperature Range: -40°C to +170°C
 -40°C to +150°C (type -004*)
 Mating Cycles: 10,000 insertions min.
 Contact Force: 20g to 80g per pin

Materials and Finish

Housing: Polyetherimide (PEI), glass-filled
 Contacts: Beryllium Copper (BeCu)
 Plating: Gold over Nickel



Part Number (Details)

IC191 - 032 2 - 001 * - *

Series No. [032]
 No. of Contact Pins [2]
 Number of Sides with Contacts [001]
 Design Number [*]
 Positioning Pin:
 N = Without Positioning Pin
 Unmarked = With Positioning Pin
 Protection Key**
 K = With Protection Key
 Unmarked = Without Protection Key

**Protection Key: Prevents IC from releasing during transportation

Series IC363 (Open Top)
Thin Small Outline Package (TSOP Type II)

0.65 and 0.8mm Pitch

Specifications

Insulation Resistance: 1,000MΩ min. at 500V DC
 Dielectric Withstanding Voltage: 700V AC for 1 minute
 Contact Resistance: 30mΩ max. at 10mA/20mV max.
 Operating Temperature Range: -40°C to +150°C
 Mating Cycles: 10,000 insertions min.
 Contact Force: 20g to 60g per pin
 Operating Force: 2.5kg max.

Materials and Finish

Housing: Polyetherimide (PEI), glass-filled
 Contacts: Beryllium Copper (BeCu)
 Plating: Gold over Nickel



Part Number (Details)

IC363 - 0** 2 - 00* *

Series No. [0**]
 No. of Contact Pins [2]
 Number of Sides with Contacts [00*]
 Design No. [*]
 Positioning Pin:
 N = Without Positioning Pin
 P = With Positioning Pin

Series IC369 (Open Top)
Thin Small Outline Package (TSOP Type II)

0.8mm Pitch

Specifications

Insulation Resistance: 1,000MΩ min. at 500V DC
 Dielectric Withstanding Voltage: 700V AC for 1 minute
 Contact Resistance: 30mΩ max. at 10mA/20mV max.
 Operating Temperature Range: -40°C to +150°C
 Mating Cycles: 10,000 insertions min.
 Contact Force: 45g ±15g per pin

Materials and Finish

Housing: Polyetherimide (PEI), glass-filled
 Contacts: Beryllium Copper (BeCu)
 Plating: Gold over Nickel



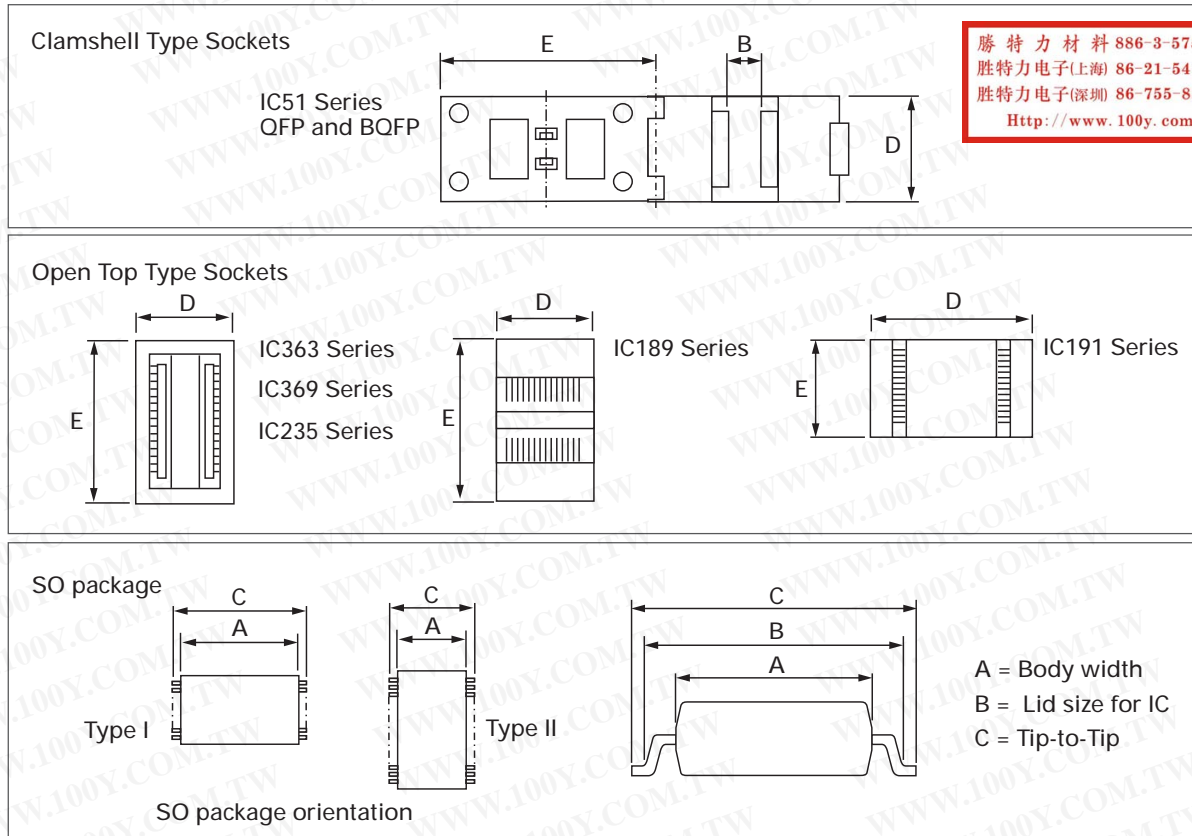
Part Number (Details)

IC369 - 054 2 - *

Series No. [054]
 No. of Contact Pins [2]
 Number of Sides with Contacts [*]
 Positioning Pin:
 N = Without Positioning Pin
 P = With Positioning Pin

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Gullwing-Leads - SO



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0.40mm Pitch

C L = Clamshell, OT = Open Top, S = Separator, FB = Floating Base

Part Number	Pitch	Pin Count	IC Dimensions			Socket Dimensions D x E	Package Type	Special Note	PCB Layout
			Body A	Lid Size IC and Socket B (max.)	Tip-to-Tip C				
IC189-0482-111 *-2	0.4	48	12.4		14.0	34.0 x 16.0	SOP	OT	
IC189-0522-124 *	0.4	52	8.69		10.49	30.5 x 18.0	SOP	OT	

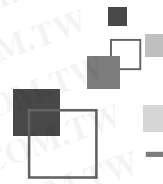
0.50mm Pitch

IC51-0242-1006-1	0.5	24	14.0	15.2	16.0	15.0 x 40.0	TSOP I	CL/FBDD	
Discontinued									
IC191-0322-001 *-*	0.5	32	18.0		20.0	16.0 x 40.0	TSOP I	OT	
IC51-0322-1031-1	0.5	32	12.0	13.3	14.0	16.0 x 33.5	TSOP I	CL/FB	
IC51-0322-1207-1	0.5	32	18.0	19.3	20.0	18.0 x 44.0	TSOP I	CL/FB	
IC51-0322-1219	0.5	32	14.0	15.2	16.0	19.0 x 40.0	TSOP I	CL/FB	
IC51-0322-883-1	0.5	32	14.0	14.5	16.0	16.0 x 39.0	TSOP I	CL/FB	
Discontinued									
IC189-0402-068 *	0.5	40	18.4		20.0	40.0 x 16.0	TSOP I	OT	
IC191-0402-002 *-*	0.5	40	18.4		20.0	18.0 x 40.0	TSOP I	OT	
IC51-0402-1174-1	0.5	40	18.4	19.3	20.0	18.0 x 44.0	TSOP I	CL/FB	
IC51-0402-1557	0.5	40	12.0	13.4	14.0	20.0 x 44.0	TSOP I	CL/FB	
IC189-0482-066 *-2	0.5	48	16.4		18.0	36.0 x 20.0	TSOP I	OT	
IC189-0482-066 *	0.5	48	16.4		18.0	36.0 x 20.0	TSOP I	OT	
IC189-0482-077 *	0.5	48	18.4		20.0	40.0 x 18.0	TSOP I	OT	
IC189-0482-094 *	0.5	48	6.1		8.1	28.1 x 18.2	TSOP I	OT	
IC191-0482-004 *-*	0.5	48	18.0		20.0	20.0 x 40.0	TSOP I	OT	
IC51-0482-1099	0.5	48	16.0	17.6	18.0	20.0 x 44.0	TSOP I	CL/FB	
IC51-0482-2018	0.5	48	18.0	19.15	20.0	20.0 x 44.0	TSOP I	CL/FB	
IC189-0562-067 *	0.5	56	18.4		20.0	40.0 x 20.0	TSOP I	OT	
Discontinued									
IC191-0562-003 *	0.5	56	18.0		20.0	21.5 x 40.0	TSOP I	OT	
IC189-0682-097 *	0.5	68	8.38		9.98	30.0 x 26.8	TSOP II	OT	

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Applicable Dimensions (Small Outline Packages, Gullwing Leads)



SMT Devices

0.55mm Pitch

Part Number	Pitch	Pin Count	A	B	C	D x E	Type	Note	PCB's
IC51-0282-673-1	0.55	28	11.8	12.6	13.4	15.0 x 37.0	SOP	CL/FB	

0.6 and 0.635mm Pitch

IC51-0322-910	0.60	32	14.0	14.6	15.2	17.5 x 39.0	SOP	FB	
IC51-1387.KS-15186	0.635	48	7.6	9.4	10.3	21.0 x 35.0	SOP	S	
IC51-0562-1387	0.635	56	7.6	9.4	10.3	21.0 x 35.0	SOP	S	

0.65mm Pitch

IC51-0162-778	0.65	16	4.4	5.6	6.4	16.0 x 32.0	SOP	S	
IC51-0162-911	0.65	16	4.4	5.6	6.4	16.0 x 32.0	SOP	FB	
IC51-755.KS-7514	0.65	16	5.6	6.7	7.6	16.0 x 32.0	SOP	S	
IC189-0202-038 *	0.65	20	6.1		8.1	24.0 x 22.5	SOP	OT	
IC51-0202-779	0.65	20	4.4	5.6	6.4	16.0 x 32.0	SOP	S	
IC51-0202-912	0.65	20	4.4	5.6	6.4	16.0 x 32.0	SOP	FB	
IC51-755.KS-7631	0.65	20	5.6	6.7	7.6	16.0 x 32.0	SOP	S	
IC189-0242-081 *	0.65	24	6.1		7.7	13.6 x 21.5	SOP	OT/	
IC51-0242-761	0.65	24	5.6	6.7	7.6	16.0 x 32.0	SOP	S	
IC51-0242-913	0.65	24	5.6	6.7	7.6	16.0 x 32.0	SOP	FB	
IC51-755.KS-13330	0.65	28	5.6	6.7	7.6	16.0 x 32.0	SOP	S	
IC189-0302-121 *	0.65	30	6.1		8.1	22.0 x 24.0	SOP	OT	
IC51-0302-755	0.65	30	5.6	6.7	7.6	16.0 x 32.0	SOP	S	
IC51-0302-914	0.65	30	5.6	6.7	7.6	16.0 x 32.0	SOP	FB	
IC189-0382-037 *	0.65	38	6.1		8.1	24.0 x 22.5	SOP	OT	
IC189-0482-047 *	0.65	48	8.0		10.0	24.0 x 22.5	SOP	OT	
IC363-0662-003 *	0.65	66	10.16		11.76	28.0x 20.20	SOP	S	
IC51-0722-1955-1	0.65	72	11.0	12.3	13.03	39.0 x 42.0	SOP	S	
IC189-0882-099 *	0.65	88	16.0		18.0	32.0 x 37.75	TSOP II	OT	

0.80mm Pitch

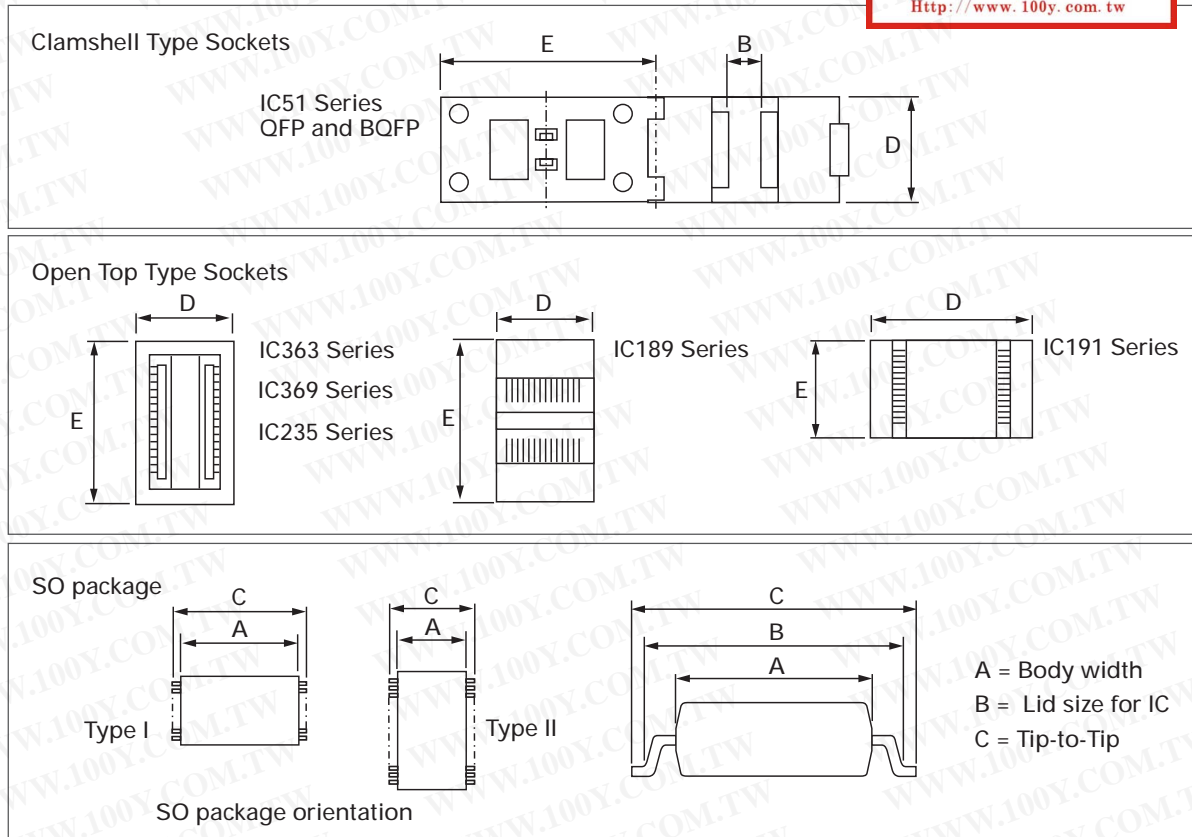
IC51-0122-1836	0.80	12	4.4	5.9	6.4	14.0 x 32.4	SOP	CL/S	
IC51-0242-308	0.80	24	5.4	6.2	7.2	32.0 x 38.5	SOP	CL/FB	
IC51-0242-577	0.80	24	7.8	9.3	10.0	22.0 x 32.5	SOP	CL/S	
IC51-0362-309	0.80	36	8.4	11.0	12.1	32.0 x 38.5	SOP	CL/FB	
IC51-0402-708	0.80	40	8.8	10.6	12.4	19.0 x 32.5	SOP	CL/S	
IC235-0402-205-*	0.80	40	10.16		15.9	19.9 x 24.0	SOP	OT	
IC189-0422-025 *-*	0.80	42	8.4		11.76	25.0 x 25.4	SOP	OT	
IC51-0422-393	0.80	42	8.4	11.0	12.1	32.0 x 38.0	SOP	CL/FB	
IC235-0442-207-*	0.80	44	10.16		11.76	19.9 x 24.0	SOP	OT	
IC51-0442-1709	0.80	44	10.2	11.0	11.8	26.0 x 36.5	SOP	CL/S	
IC235-0442-215-*	0.80	44	10.16		11.76	20.2 x 26.4	SOP	OT	
IC51-0482-1009-2	0.80	48	13.7	15.1	16.0	28.0 x 42.5	SOP	CL/FB	
IC235-0502-209-*	0.80	50	10.16		11.76	20.2 x 26.4	SOP	OT	
IC363-0502-001 *	0.80	50	10.16		11.76	26.4 x 20.2	SOP	S	
IC51-0502-1708	0.80	50	10.2	11.0	11.8	26.0 x 36.5	SOP	CL/S	
IC235-0542-218-2	0.80	54	12.7		14.3	23.0 x 28.0	SOP	OT	
IC189-0542-088 *	0.80	54	10.16		11.76	24.9x29.8	TSOP II	OT	
IC189-0542-093 *	0.80	54	10.16		11.76	24.9x29.8	TSOP II	OT	
IC235-0542-218-*	0.80	54	12.7		14.3	23.0 x 28.0	SOP	OT	
IC235-0542-250-*	0.80	54	10.16		11.76	20.2 x 28.0	SOP	OT	
IC363-0542-002 *	0.80	54	10.16		11.76	28.0 x 20.2	SOP	CL/S	
IC369-0542-002	0.80	54	10.16		11.76	28.0 x 20.2	SOP	CL/S	
IC51-0562-2144	0.80	56	13.3	15.15	16.0	22.0 x 48.5	SOP	CL/S	
IC189-0622-084 *-*	0.80	62	16.0		18.0	31.46 x 34.6	SOP	OT	
IC189-0642-007 *-*	0.80	64	12.0		14.25	27.35 x 34.1	SOP	OT	
IC189-0642-028 *-*	0.80	64	11.8		13.8	27.35 x 34.1	SOP	OT	
IC189-0642-041 *-*	0.80	64	12.0		14.25	27.35 x 34.1	SOP	OT	
IC189-0642-069 *-*	0.80	64	10.7		14.1	27.05 x 33.8	SOP	OT	
IC189-0702-074 *	0.80	70	12.64		15.9	29.3 x 37.0	SOP	OT	

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1.00mm Pitch

C L = Clamshell, OT = Open Top, S = Separator, FB = Floating Base

Part Number	Pitch	Pin Count	IC Dimensions			Socket Dimensions D x E	Package Type	Special Note	PCB Layout (see page)
			Body A	Lid Size IC and Socket B (max.)	Tip-to-Tip C				
IC51-0242-310-1	1.00	24	4.5	5.2	6.0	18.0 x 28.5	SOP	CL/S	
IC51-0322-948	1.00	32	8.2	10.5	11.8	20.0 x 32.0	SOP	CL/S	
IC51-0342-741	1.00	34	7.8	7.9	9.4	22.0 x 35.0	SOP	CL/S	

1.25mm Pitch

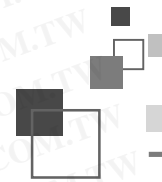
IC51-0142-951	1.25	14	4.4	5.2	5.9	24.0 x 27.5	SOP	CL/S	
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1.27mm Pitch

IC235-0082-236-*	1.27	8	7.0		8.6	16.8 x 12.0	SOP	OT	
IC51-0082-1024	1.27	8	5.2	7.2	7.9	18.5 x 32.5	SOP	CL/FB	
IC51-1035.KS-10460	1.27	8	4.0	5.4	6.0	22.0 x 27.20	SOP	CL/S	
IC51-0142-084	1.27	14	4.4	5.7	6.5	22.0 x 25.0	SOP	CL/S	
IC51-0142-1013	1.27	14	5.2	7.2	7.9	18.5 x 32.5	SOP	CL/FB	
IC51-1035.KS-15187	1.27	14	4.0	5.4	6.0	22.0 x 27.2	SOP	CL/S	
IC189-0162-003 *-*	1.27	16	5.6		7.8	20.8 x 16.0	SOP	OT	
IC189-0162-019 *-*	1.27	16	5.3		7.7	20.9 x 16.1	SOP	OT	
IC51-0162-1025	1.27	16	5.2	7.2	7.9	18.5 x 32.5	SOP	CL/FB	
IC51-0162-1035	1.27	16	4.0	5.4	6.0	22.0 x 27.2	SOP	CL/S	
IC51-0162-1042	1.27	16	4.0	5.4	6.2	22.0 x 27.2	SOP	CL/S	
IC51-0162-271-1		DISCONTINUED							

Applicable Dimensions (Small Outline Packages, Gullwing Leads)

SMT Devices



1.27mm Pitch

Part Number	Pitch	Pin Count	IC Dimensions			Socket Dimensions D x E	Package Type	Special Note	PCB Layout see Page
			Body A	Lid Size IC and Socket B (max.)	Tip-to-Tip C				
IC51-0162-271-2	DISCONTINUED								
IC51-0162-271-3	DISCONTINUED								
IC51-0162-272-1	1.27	16	5.5	5.7	6.5	13.0 x 26.5	SOP	CL/S	
IC51-0162-273-1	1.27	16	5.5	6.22	7.0	13.0 x 26.5	SOP	CL/S	
IC51-0162-658	1.27	16	4.4	6.2	7.0	26.0 x 31.5	SOP	CL/S	
IC51-0162-902-2	1.27	16	5.3	7.2	8.2	12.0 x 28.5	SOP	CL/S	
IC51-347.KS-7704	1.27	16	7.7	9.5	10.3	18.0 x 31.5	SOP	CL/S	
IC51-347.KS-6768	1.27	18	7.7	9.5	10.3	16.0 x 31.5	SOP	CL/S	
IC235-0202-201-*	1.27	20	7.56		9.22	17.3 x 22.0	SOP	OT	
IC51-0202-1026	1.27	20	5.2	7.2	7.9	18.5 x 32.5	SOP	CL/FB	
IC51-0202-347	1.27	20	7.7	9.5	10.3	16.0 x 31.5	SOP	CL/S	
IC51-0202-714	1.27	20	7.6	9.3	10.3	18.0 x 32.0	SOP	CL/FB	
IC51-0202-932-1	1.27	20	5.4	6.5	7.2	15.5 x 26.0	SOP	CL/S	
IC51-334.KS-13574	1.27	20	7.5	9.4	10.3	18.0 x 32.0	SOP	CL/S	
IC51-0222-803	1.27	22	5.5	6.0	6.6	16.5 x 29.0	SOP	CL/S	
IC189-0242-021 *-*	1.27	24	5.60		7.7	24.0 x 22.5	SOP	OT	
IC189-0242-040	1.27	24	7.15		10.3	24.0 x 22.5	SOP	OT	
IC51-0242-303-1	1.27	24	5.3	7.3	8.0	18.0 x 28.5	SOP	CL/S	
IC51-0242-303-3	1.27	24	5.35	6.0	7.0	18.0 x 30.5	SOP	CL/S	
IC51-0242-367-1	1.27	24	9.4	10.43	11.2	18.0 x 32.5	SOP	CL/S	
IC51-0242-793	1.27	24	5.5	7.1	8.0	18.5 x 29.0	SOP	CL/S	
IC51-0242-980	1.27	24	5.2	7.2	7.9	18.5 x 32.5	SOP	CL/FB	
IC235-0242-202-*	1.27	24	7.56		9.22	17.3 x 22.0	SOP	OT	
IC235-0242-203-*	1.27	24	10.16		11.76	19.9 x 23.3	SOP	OT	
IC51-334.KS-6411	1.27	24	7.5	9.4	10.3	22.0 x 32.5	SOP	CL/S	
IC235-0262-206-*	1.27	26	7.56		9.22	17.3 x 22.0	SOP	OT	
IC51-0262-1339 *	1.27	26	7.6	8.4	9.2	23.0 x 35.5	SOP	CL/FB	
IC189-0282-042 *	1.27	28	7.15		10.3	24.0 x 22.5	SOP	OT	
IC235-0282-204-*	1.27	28	10.16		11.76	19.9 x 23.3	SOP	OT	
IC51-0282-334-1	1.27	28	7.5	9.4	10.3	22.0 x 32.5	SOP	CL/S	
IC51-0282-474	1.27	28	8.4	11.1	12.0	22.0 x 32.5	SOP	CL/S	
IC51-0282-986	1.27	28	7.6	9.6	10.3	23.0 x 35.5	SOP	CL/FB	
IC51-0302-371-2	1.27	30	8.0	9.2	10.3	24.0 x 32.5	SOP	CL/S	
IC51-0302-904	1.27	30	7.8	9.2	10.3	24.0 x 32.5	SOP	CL/S	
IC189-0322-004 *-*	1.27	32	11.4		14.1	27.2 x 26.5	SOP	OT	
IC189-0322-005 *-*	1.27	32	11.0		14.0	27.2 x 27.5	SOP	OT	
IC235-0322-232-*	1.27	32	10.16		11.76	20.2 x 26.4	SOP	OT	
IC51-0322-304-2	1.27	32	8.4	11.0	12.0	24.0 x 32.5	SOP	CL/S	
IC51-0322-667	1.27	32	11.6	13.1	14.0	26.0 x 33.0	SOP	CL/S	
IC51-0322-667-2	1.27	32	11.6	13.1	14.0	26.0 x 33.0	SOP	CL/S	
IC51-0322-937	1.27	32	8.8	10.9	12.0	26.0 x 31.5	SOP	CL/S	
IC51-0322-950	1.27	32	11.3	13.0	15.0	28.0 x 42.5	SOP	CL/FB	
IC189-0402-096 *	1.27	40	11.3		14.1	27.2 x 31.6	SOP	OT	
IC51-0402-1197	1.27	40	10.9	12.9	13.7	20.0 x 52.0	SOP	CL/S	
IC51-0402-991	1.27	40	11.6	13.0	14.0	30.0 x 34.5	SOP	CL/S	
IC51-0442-1208	1.27	44	12.8	14.7	15.6	22.0 x 55.0	SOP	CL/SS	
IC51-0442-1315	1.27	44	13.0	15.0	15.8	33.0 x 40.5	SOP	CL/FB	
IC51-0442-1536	1.27	44	13.4	14.7	15.6	22.0 x 55.0	SOP	CL/SS	

Click on radio button for PCB dimensions

Click on radio button for PCB dimensions

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