



**THE DATASHEET OF  
FH33-20S-0.5SH(99)**



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 In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

APPLICABLE STANDARD						
RATING	OPERATING TEMPERATURE RANGE	-55 °C TO 85 °C	STORAGE TEMPERATURE RANGE	-10 °C TO 50 °C (PACKED CONDITION)		
	VOLTAGE	50 V AC / DC	OPERATING OR STORAGE HUMIDITY RANGE	RELATIVE HUMIDITY 90 % MAX (NOT DEWED)		
	CURRENT	0.5 A	APPLICABLE CABLE	t=0.3±0.05mm, GOLD PLATING.(4~30 POS.) t=0.3±0.03mm, GOLD PLATING.(OVER 31 POS.)		
SPECIFICATIONS						
ITEM	TEST METHOD		REQUIREMENTS	QT	AT	
CONSTRUCTION						
GENERAL EXAMINATION	VISUALLY AND BY MEASURING INSTRUMENT.		ACCORDING TO DRAWING.	x	x	
MARKING	CONFIRMED VISUALLY.			x	x	
ELECTRICAL CHARACTERISTICS						
VOLTAGE PROOF	150 V AC FOR 1 min.		NO FLASHOVER OR BREAKDOWN.	x	x	
INSULATION RESISTANCE	100 V DC.		500 MΩ MIN.	x	x	
CONTACT RESISTANCE	AC 20 mV MAX ( 1 KHz ), 1 mA .		50 mΩ MAX. INCLUDING FPC,FFC BULK RESISTANCE (L=8mm)	x	x	
MECHANICAL CHARACTERISTICS						
VIBRATION	FREQUENCY 10 TO 55 Hz, HALF AMPLITUDE 0.75 mm, - m/s <sup>2</sup> FOR 10 CYCLES IN 3 AXIAL DIRECTIONS.		① NO ELECTRICAL DISCONTINUITY OF 1 μs. ② CONTACT RESISTANCE: 50 mΩ MAX. ③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	x	-	
SHOCK	981 m/s <sup>2</sup> , DURATION OF PULSE 6 ms AT 3 TIMES IN 3 BOTH AXIAL DIRECTIONS.			x	-	
MECHANICAL OPERATION	20 TIMES INSERTIONS AND EXTRACTIONS.		① CONTACT RESISTANCE: 50 mΩ MAX. ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	x	-	
FPC RETENTION FORCE	MEASURED BY APPLICABLE FPC. (THICKNESS OF FPC SHALL BE t=0.30mm AT INITIAL CONDITION.)		DIRECTION OF INSERTION : 0.3N × n MIN.(4~30 POS.) 0.2N × n MIN.(OVER 31 POS.) (note 1)	x	-	
ENVIRONMENTAL CHARACTERISTICS						
CORROSION SALT MIST	EXPOSED AT 35±2 °C , 5 % SALT WATER SPRAY FOR 96 h.		① CONTACT RESISTANCE: 100 mΩ MAX. ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS. ③ NO EVIDENCE OF CORROSION WHICH AFFECTS TO OPERATION OF CONNECTOR.	x	-	
RAPID CHANGE OF TEMPERATURE	TEMPERATURE-55→+15to+35→+85→+15to+35°C TIME 30→ 2to 3 → 30→ 2to 3 min UNDER 5 CYCLES.			① CONTACT RESISTANCE: 50 mΩ MAX. ② INSULATION RESISTANCE: 50 MΩ MIN. ③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	x	-
DAMP HEAT (STEADY STATE)	EXPOSED AT 40±2 °C, RELATIVE HUMIDITY 90 TO 95 %, 96 h.				x	-
DAMP HEAT,CYCLIC	EXPOSED AT -10 TO +65 °C, RELATIVE HUMIDITY 90 TO 96 %, 10 CYCLES,TOTAL 240 h.		① CONTACT RESISTANCE: 50 mΩ MAX. ② INSULATION RESISTANCE: 1 MΩ MIN. (AT HIGH HUMIDITY) ③ INSULATION RESISTANCE: 50 MΩ MIN. (AT DRY) ④ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	x	-	
	COUNT	DESCRIPTION OF REVISIONS	DESIGNED	CHECKED	DATE	
REMARK				APPROVED	NF. MIYAZAKI 16.08.31	
				CHECKED	YH. MICHIDA 16.08.31	
				DESIGNED	KN. KOBAYASHI 16.08.31	
				DRAWN	RK. OGASAWARA 16.08.31	
Unless otherwise specified, refer to IEC 60512.			DRAWING NO.	ELC-156169-99-00		
Note	QT:Qualification Test AT:Assurance Test X:Applicable Test					
<b>HRS</b>	SPECIFICATION SHEET		PART NO.	FH33-**S-0.5SH(99)		
	HIROSE ELECTRIC CO., LTD.		CODE NO.	CL580	△ 1/2	

## SPECIFICATIONS

ITEM	TEST METHOD	REQUIREMENTS	QT	AT
DRY HEAT	EXPOSED AT 85±2 °C, 96 h.	① CONTACT RESISTANCE: 50 mΩ MAX.	x	—
COLD	EXPOSED AT -55±3°C, 96 h.	② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	x	—
SULPHUR DIOXIDE [JIS C 60068-2-42]	EXPOSED AT 40±2 °C , RELATIVE HUMIDITY 80±5% 25±5 ppm FOR 96 h.	① CONTACT RESISTANCE: 100 mΩ MAX. ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.	x	—
HYDROGEN SULPHIDE [JIS C 60068-2-43]	EXPOSED AT 40±2 °C , RELATIVE HUMIDITY 80±5% , 10 TO 15 ppm FOR 96 h.	③ NO EVIDENCE OF CORROSION WHICH AFFECTS TO OPERATION OF CONNECTOR.	x	—
SOLDERABILITY	SOLDERED AT SOLDER TEMPERATURE, 235 ±5°C FOR IMMERSION DURATION, 2±0.5 sec.	A NEW UNIFORM COATING OF SOLDER SHALL COVER A MINIMUM OF 95 % OF THE SURFACE BEING IMMERSED.	x	—
RESISTANCE TO SOLDERING HEAT	1) REFLOW SOLDERING : PEAK TMP. 250 °C MAX . REFLOW TMP. OVER 230 °C WITHIN 60 sec. 2) SOLDERING IRONS : TMP. 350 ± 10 °C FOR 5±1 sec .	NO DEFORMATION OF CASE OF EXCESSIVE LOOSENESS OF THE TERMINALS.	x	—

**(note1)**

THIS PRODUCT HAS FLIP-LOCK CONSTRUCTION. FASTEN FPC ON PCB OR SOMETHING FIXED IF FORCE IN VERTICAL DIRECTION SHALL BE PREDICTED.


Note QT:Qualification Test AT:Assurance Test X:Applicable Test		DRAWING NO.		ELC-156169-99-00	
<b>HRS</b>	SPECIFICATION SHEET		PART NO.	FH33-**S-0. 5SH (99)	
	HIROSE ELECTRIC CO., LTD.		CODE NO	CL580	△ 2/2

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