

REPLACEMENT PART REFERENCE GUIDE, USB-1SP8T-63H

AN-80-031

Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part

Original Part	USB-1SP8T-63H	
Replacement Part	USB-1SP8T-852H	

1. MECHANICAL DIMENSIONS

Original Part: USB-1SP8T-63H	Replacement Part: USB-1SP8T-852H
Case Style: QM2280	Case Style: QM2280
Conclusion: Original and Replacement Part have the same exact Case Style and Mechanical Dimensions.	

2. ELECTRICAL PERFORMANCE:

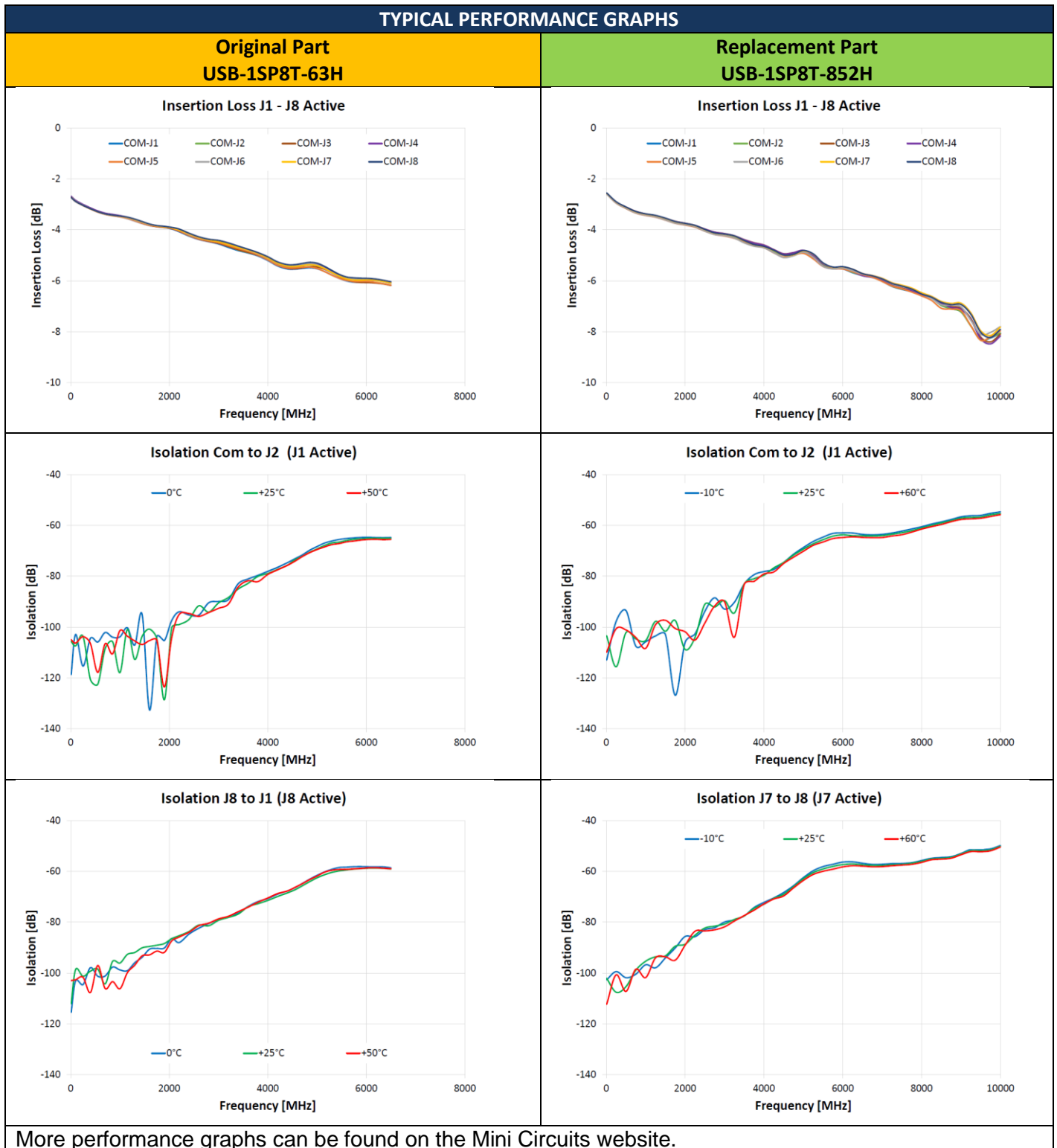
SUMMARY ELECTRICAL PERFORMANCE CHARACTERISTICS			
Parameters	Conditions (MHz)	USB-1SP8T-63H (Original part)	USB-1SP8T-852H (Replacement part)
Frequency	–	10 - 6000	10 - 8500
Insertion Loss	6000 - 7200	–	6.0 dB Typ, 8.0 dB Max
	7200 - 8000	–	6.5 dB Typ, 8.5 dB Max
	8000 - 8500	–	7.0 dB Typ, 9.0 dB Max
Isolation (between ports J1 - J8)	6000 - 8000	–	57 dB Typ, 50 dB Min
	8000 - 8500	–	55 dB Typ, 49 dB Min
Isolation (Com to terminated port)	6000 - 8000	–	63 dB Typ, 54 dB Min
	8000 - 8500	–	60 dB Typ, 52 dB Min
Return Loss (Com port, active)	6000 - 7200	–	18.0 dB Typ
	7200 - 8000	–	15.0 dB Typ
	8000 - 8500	–	12.0 dB Typ
Return Loss (any port to Com)	6000 - 7200	–	16.0 dB Typ
	7200 - 8500	–	13.0 dB Typ
Return Loss (any terminated port)	6000 - 8000	–	21.0 dB Typ
	8000 - 8500	–	16.0 dB Typ
Power input @1 dB compression	6000 - 8500	–	+35 dBm Typ
IP3	6000 - 8500	–	+50 dBm Typ
Operating RF input power (through path // cold switching)	10 - 40	Derates linearly from +30 dBm @ 40 MHz to +23 dBm @ 10 MHz	Derates linearly from +30 dBm @ 40 MHz to +25 dBm @ 10 MHz
	6000 - 8500	–	+29 dBm Max
Operating RF input power (any terminated port) + (per port // hot switching)	10 - 6000	+23 dBm Max	+24 dBm Max
	6000 - 8500	–	+24 dBm Max
Operating temperature	–	0°C to 50°C	-10°C to 60°C
Storage temperature	–	-20°C to 60°C	-20°C to 85°C

Compared to the USB-1SP8T-63H, the USB-1SP8T-852H has the following differences:

- Electrical specification has been extended for the 6000 - 8500 MHz frequency range.
- Improvement in operating RF input power.
- Improvement in operating and storage temperatures.

Overall, users can expect USB-1SP8T-852H to perform the same as USB-1SP8T-63H in the original 10 - 6000 MHz frequency range (refer to section 3 for typical performance graphs). As such, the electrical specification for this range is not listed in the table unless it has changed.

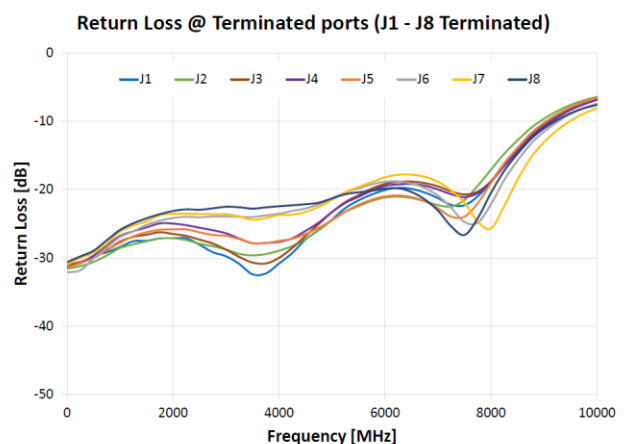
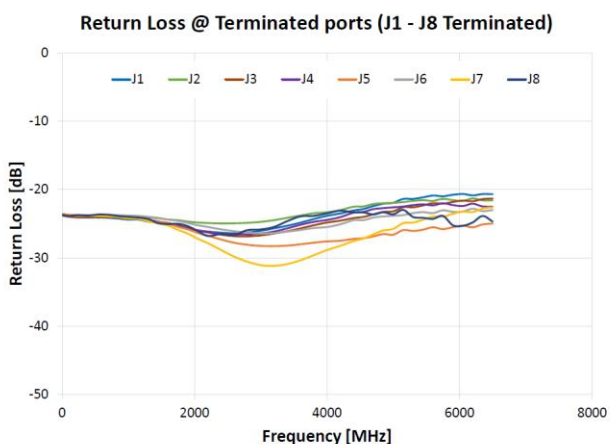
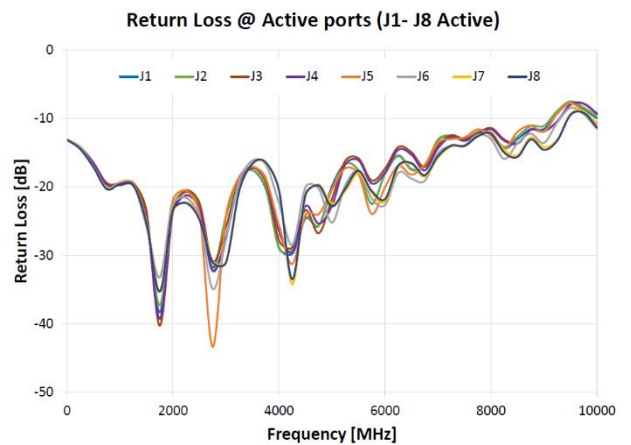
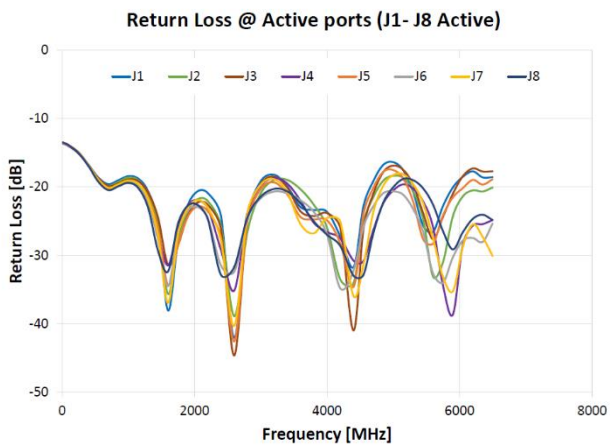
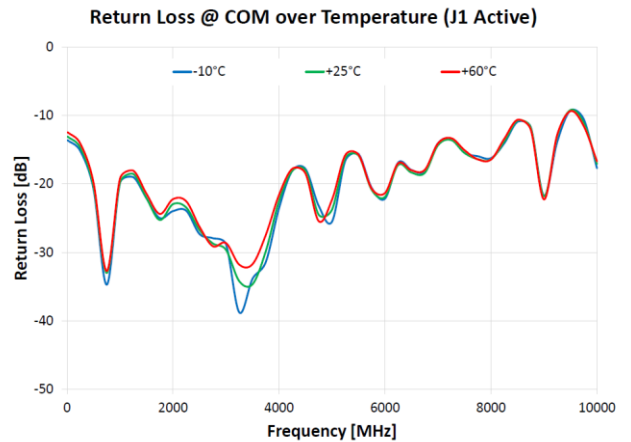
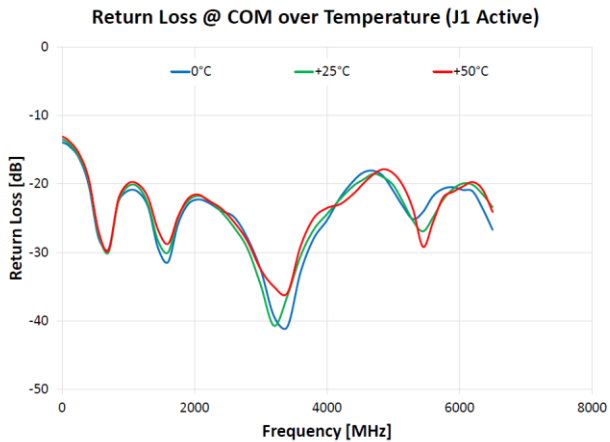
3. TYPICAL PERFORMANCE GRAPHS



TYPICAL PERFORMANCE GRAPHS

**Original Part
USB-1SP8T-63H**

**Replacement Part
USB-1SP8T-852H**



More performance graphs can be found on the Mini Circuits website.

4 CONCLUSION

USB-1SP8T-852H manages to provide the same performance level as that of USB-1SP8T-63H in the original 10 - 6000 MHz frequency range all while performing within an expanded operating temperature range.

Additionally, users will find the USB-1SP8T-852H to be better suitable for modern applications due to extending the supported frequency range from 6000 MHz to 8500 MHz.

This makes the USB-1SP8T-852H an excellent replacement for the USB-1SP8T-63H – keeping the existing performance level for users' past and current applications while also providing support for users' future applications.

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