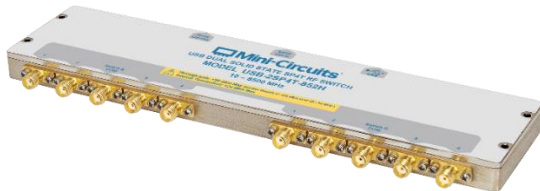


REPLACEMENT PART REFERENCE GUIDE, USB-2SP4T-63H

AN-80-030

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

Original Part	USB-2SP4T-63H	
Replacement Part	USB-2SP4T-852H	

1. MECHANICAL DIMENSIONS

Original Part: USB-2SP4T-63H	Replacement Part: USB-2SP4T-852H
Case Style: QM2605	Case Style: QM2605
Conclusion: Original and Replacement Part have the same exact Case Style and Mechanical Dimensions.	

2. ELECTRICAL PERFORMANCE:

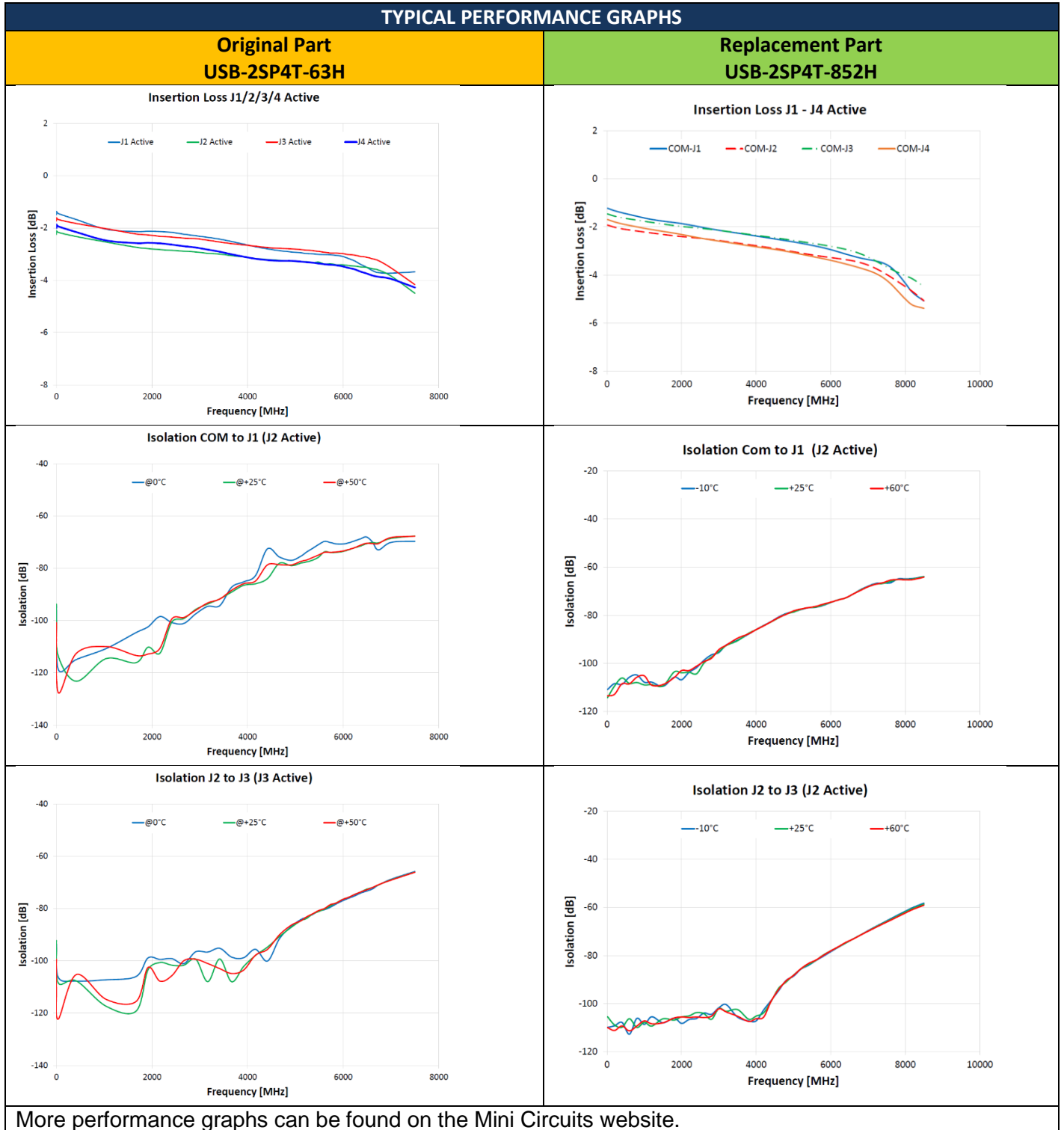
SUMMARY ELECTRICAL PERFORMANCE CHARACTERISTICS			
Parameters	Conditions (MHz)	USB-2SP4T-63H (Original part)	USB-2SP4T-852H (Replacement part)
Frequency	–	10 - 6000	10 - 8500
Insertion Loss	6000 - 7200	–	3.7 dB Typ, 6.0 dB Max
	7200 - 8000	–	4.3 dB Typ, 6.5 dB Max
	8000 - 8500	–	5.0 dB Typ, 7.0 dB Max
Isolation (between ports J1 - J4 of any given switch)	6000 - 7200	–	72 dB Typ, 58 dB Min
	7200 - 8000	–	67 dB Typ, 57 dB Min
	8000 - 8500	–	60 dB Typ, 50 dB Min
Isolation (Com to terminated port of any given switch)	6000 - 7200	–	64 dB Typ, 55 dB Min
	7200 - 8000	–	60 dB Typ, 50 dB Min
	8000 - 8500	–	57 dB Typ, 45 dB Min
Isolation (Disconnected state) (Com to J1, J2, J4 of any given switch)	6000 - 7200	–	64 dB Typ, 55 dB Min
	7200 - 8000	–	60 dB Typ, 50 dB Min
	8000 - 8500	–	57 dB Typ, 45 dB Min
Isolation (Disconnected state) (Com to J3 of any given switch)	6000 - 7200	–	24 dB Typ, 34 dB Min
	7200 - 8000	–	21 dB Typ, 33 dB Min
	8000 - 8500	–	18 dB Typ, 32 dB Min
Isolation (Crosstalk between switches)	6000 - 8500	–	100 dB Typ, 85 dB Min
Return Loss (Com port, active)	6000 - 7200	–	15.0 dB Typ
	7200 - 8000	–	10.0 dB Typ
	8000 - 8500	–	7.0 dB Typ
Return Loss (any port to Com)	6000 - 7200	–	13.5 dB Typ
	7200 - 8000	–	10.0 dB Typ
	8000 - 8500	–	8.5 dB Typ
Return Loss (any terminated port)	6000 - 8000	–	15.5 dB Typ
	8000 - 8500	–	12.0 dB Typ
Power input @1 dB compression	6000 - 8500	–	+33 dBm Typ
IP3	6000 - 8500	–	+50 dBm Typ
Operating RF input power (through path // cold switching)	10 - 50	Derates linearly from +30 dBm @ 50 MHz to +23 dBm @ 10 MHz	Derates linearly from +30 dBm @ 50 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-2SP4T-63H, the USB-2SP4T-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-2SP4T-852H to perform the same as USB-2SP4T-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.

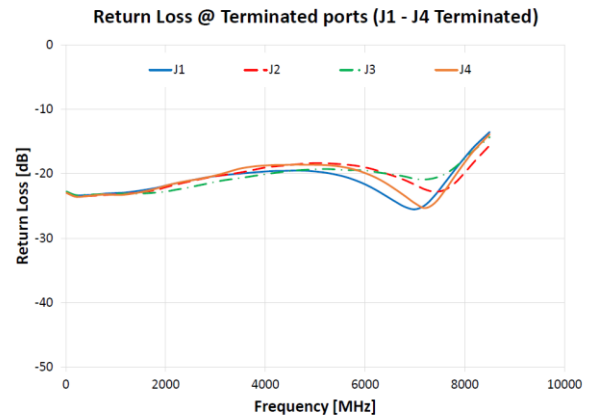
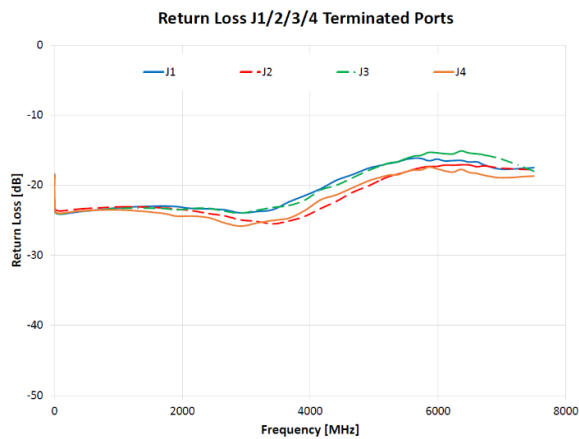
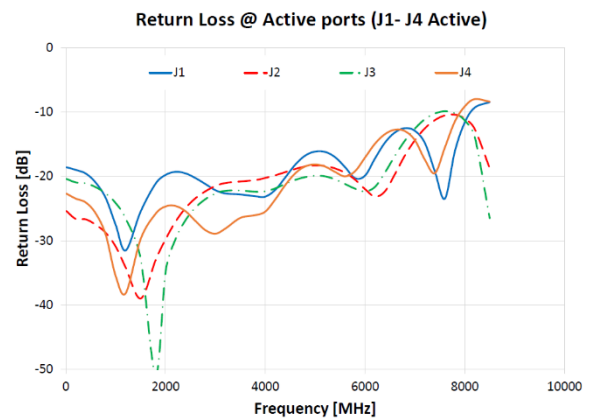
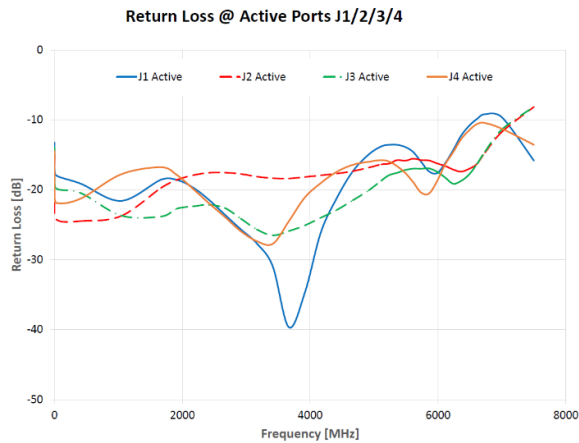
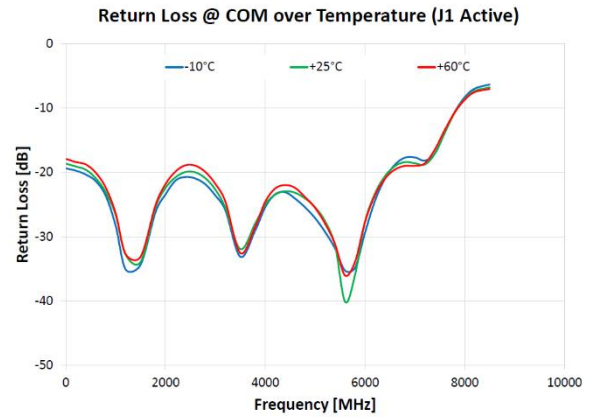
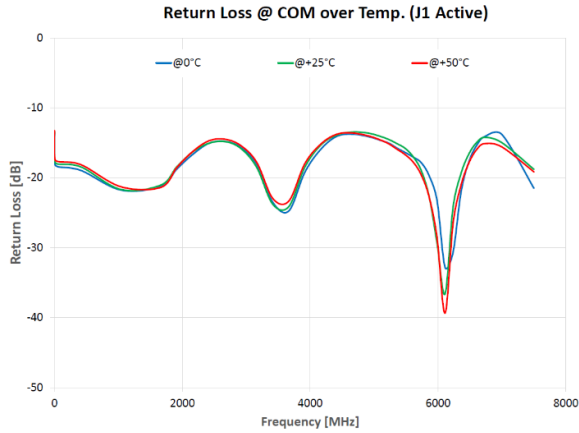
3. TYPICAL PERFORMANCE GRAPHS



TYPICAL PERFORMANCE GRAPHS

Original Part
USB-2SP4T-63H

Replacement Part
USB-2SP4T-852H



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

4 CONCLUSION

USB-2SP4T-852H manages to provide the same performance level as that of USB-2SP4T-63H in the original 10 - 6000 MHz frequency range all while performing within an expanded operating temperature range.

Additionally, users will find the USB-2SP4T-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-2SP4T-852H an excellent replacement for the USB-2SP4T-63H – keeping the existing performance level for users' past and current applications while also providing support for users' future applications.

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