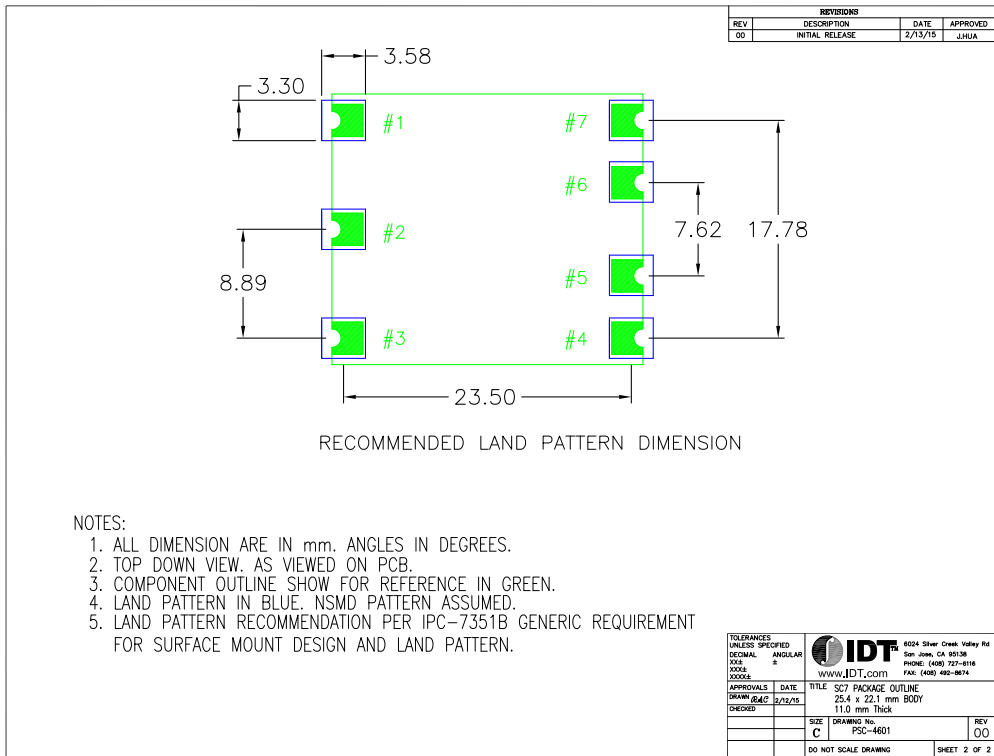
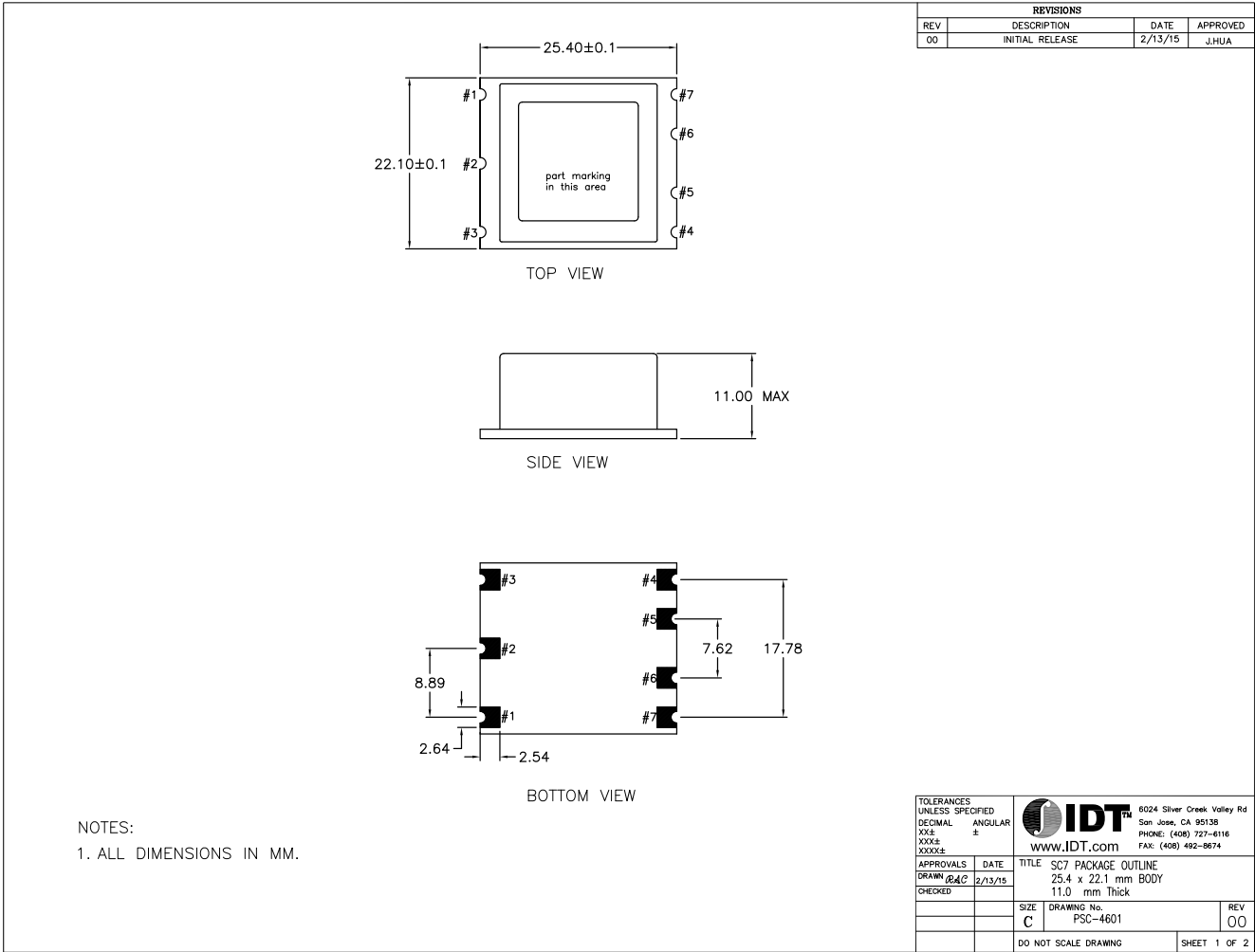


## Specifications

Parameters	Ratings/Units
<b>Frequency (Fo)</b>	12.800000 MHz
<b>Frequency Stability vs.:</b> Operating Temperature (TOPR) Change of VDD ( $\pm 5\%$ )	$\pm 10$ ppb (0.010ppm) $\pm 0.5$ ppb (0.0005ppm)
<b>Temperature Range:</b> Operating (TOPR) Storage (TSTG)	-40°C ~ +85°C -40°C ~ +85°C
<b>Supply Voltage (VDD)</b>	3.3VDC $\pm 5\%$
<b>Output Load (HCMOS)</b>	15 pF $\pm 1$ pF
<b>Output Voltage</b> (VOL) (VOH) Spurious Rise Time (TR) (10% ~ 90% VDD) Rise Time (TF) (90% ~ 10% VDD) Symmetry	0.1V Typ, 0.4V Max 3.3V Typ, 2.8V Min -60dBc Max 5 nS Max 5 nS Max 45% / 55%
<b>Frequency Control</b> Slope Pin #2 Reference (VREF into 9k Min) Frequency Change ( $\Delta F$ ) Non-Linearity (0.8V to VDD) Voltage Control (Vc) Input Impedance (ZIN)	Positive 2.8 $\pm 0.1$ VDC $\pm 0.5$ ppm Min. $\pm 10$ % 0V to 2.8V 100K Ohm Min.
<b>Warm-Up:</b> Time (to $\pm 10$ ppb) (Referenced to Fo @ 60min after turn-on) Warm-Up Current Operating Power	5 Minutes  1000mA Max 1.2 W Max at 25°C
<b>Aging:</b> Short-term Aging (1 <sup>st</sup> 45 days) 1 <sup>st</sup> year Aging (after 45 days) Long Term (10-years ALL effects) Allen Variance (1 sec samples)	$\pm 0.5$ ppb / day Max $\pm 50$ ppb $\pm 0.4$ PPM Max $< 50 \times 10^{-12}$ / Sec
<b>Phase Noise:</b> @ 1 Hz Offset: @ 10 Hz Offset: @ 100 Hz Offset: @ 1 kHz Offset: @ 10 kHz Offset:	-95 dBc/Hz Typ -120 dBc/Hz Typ -135 dBc/Hz Typ -145 dBc/Hz Typ -155 dBc/Hz Typ
<b>Moisture Sensitivity Level (MSL)</b>	1
<b>Termination Finish</b>	Immersion Gold
<b>Weight (Typ)</b>	5.7 g

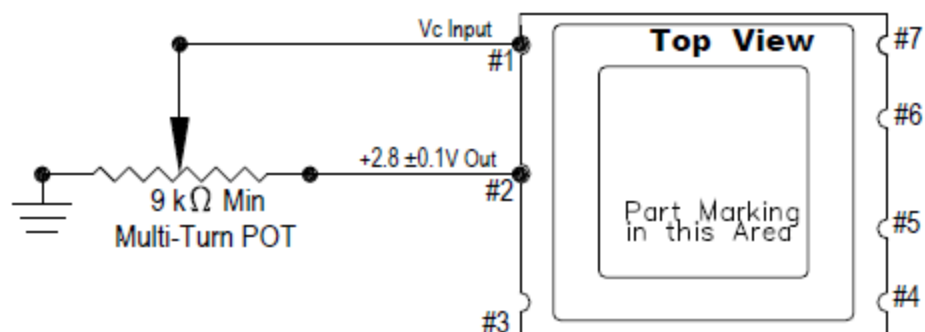
# Package Outline and Dimensions (SC7)



## Pin Connections

Pin Number	Description
1	VC
2	VREF
3	VDD
4	RF Output
5	No connect
6	No connect
7	GND/Case
Metal Cover	Nickel-Silver

## Recommended Vc Adjustment Circuit



## Ordering Information

Part / Order Number	Shipping Packaging	Package	Temperature
845-12.8-1SC7I	Cut-Tape	25.4 x 22.1 x 11.0 mm SC7	-40 to +85 °C
845-12.8-1SC7I8	Tape and Reel	25.4 x 22.1 x 11.0 mm SC7	-40 to +85 °C

## IMPORTANT NOTICE AND DISCLAIMER

RENESAS ELECTRONICS CORPORATION AND ITS SUBSIDIARIES (“RENESAS”) PROVIDES TECHNICAL SPECIFICATIONS AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THIRD-PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for developers who are designing with Renesas products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. Renesas grants you permission to use these resources only to develop an application that uses Renesas products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Renesas intellectual property or to any third-party intellectual property. Renesas disclaims responsibility for, and you will fully indemnify Renesas and its representatives against, any claims, damages, costs, losses, or liabilities arising from your use of these resources. Renesas' products are provided only subject to Renesas' Terms and Conditions of Sale or other applicable terms agreed to in writing. No use of any Renesas resources expands or otherwise alters any applicable warranties or warranty disclaimers for these products.

(Disclaimer Rev.1.01 Jan 2024)

### Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,  
Koto-ku, Tokyo 135-0061, Japan  
[www.renesas.com](http://www.renesas.com)

### Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.

### Contact Information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit [www.renesas.com/contact-us/](http://www.renesas.com/contact-us/).