



SamHop Microelectronics Corp.

STS2601

Ver 1.0

P-Channel Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY		
V _{DS}	I _D	R _{DS(ON)} (mΩ) Max
-20V	-4.0A	80 @ V _{GS} =-4.5V
		110 @ V _{GS} =-2.5V

FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- SOT-26 package.



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Symbol	Parameter	Limit	Units
V _{DS}	Drain-Source Voltage	-20	V
V _{GS}	Gate-Source Voltage	±12	V
I _D	Drain Current-Continuous ^a	T _A =25°C	-4.0
		T _A =70°C	-3.2
I _{DM}	-Pulsed ^b	-16	A
P _D	Maximum Power Dissipation ^a	T _A =25°C	2
		T _A =70°C	1.28
T _J , T _{STG}	Operating Junction and Storage Temperature Range	-55 to 150	°C

THERMAL CHARACTERISTICS

R _{θJA}	Thermal Resistance, Junction-to-Ambient ^a	62.5	°C/W
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ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V , ID=-250uA	-20			V
IDSS	Zero Gate Voltage Drain Current	VDS=-16V , VGS=0V			1	uA
IGSS	Gate-Body Leakage Current	VGS= ±10V , VDS=0V			±100	nA
ON CHARACTERISTICS						
VGS(th)	Gate Threshold Voltage	VDS=VGS , ID=-250uA	-0.5	-0.8	-1.5	V
RDS(ON)	Drain-Source On-State Resistance	VGS=-4.5V , ID=-4.0A		60	80	m ohm
		VGS=-2.5V , ID=-3.4A		80	110	m ohm
gFS	Forward Transconductance	VDS=-5.0V , ID=-4.0A		4		S
DYNAMIC CHARACTERISTICS ^c						
CISS	Input Capacitance	VDS=-10V, VGS=0V f=1.0MHz		586		pF
COSS	Output Capacitance			101		pF
CRSS	Reverse Transfer Capacitance			59		pF
SWITCHING CHARACTERISTICS ^c						
td(ON)	Turn-On Delay Time	VDD=-10V ID=-1A VGS=-4.5V RGEN=6 ohm		6.5		ns
tr	Rise Time			32.1		ns
td(OFF)	Turn-Off Delay Time			58.4		ns
tf	Fall Time			48		ns
Qg	Total Gate Charge			5.92		nC
Qgs	Gate-Source Charge	VDS=-10V, ID=-4.0A, VGS=-4.5V		1.36		nC
Qgd	Gate-Drain Charge			1.4		nC
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
IS	Maximum Continuous Drain-Source Diode Forward Current				-1.25	A
VSD	Diode Forward Voltage	VGS=0V, IS=-1.25A		-0.815	-1.2	V
Notes						
a. Surface Mounted on FR4 Board, t ≤ 10sec.						
b. Pulse Test: Pulse Width ≤ 300us, Duty Cycle ≤ 2%.						
c. Guaranteed by design, not subject to production testing.						

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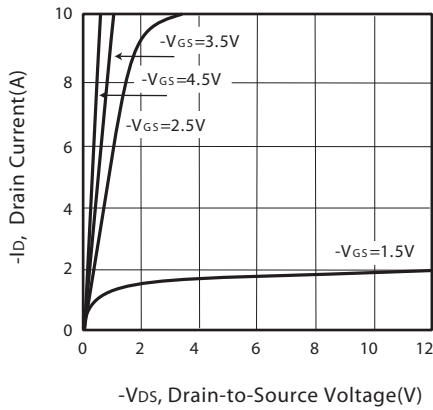


Figure 1. Output Characteristics

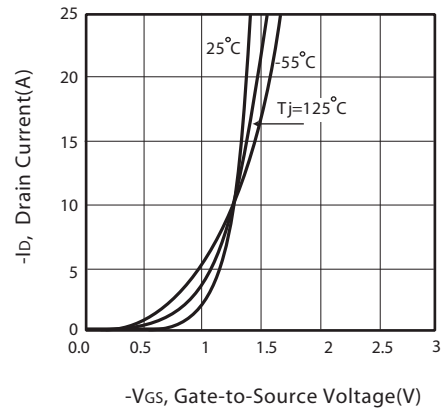


Figure 2. Transfer Characteristics

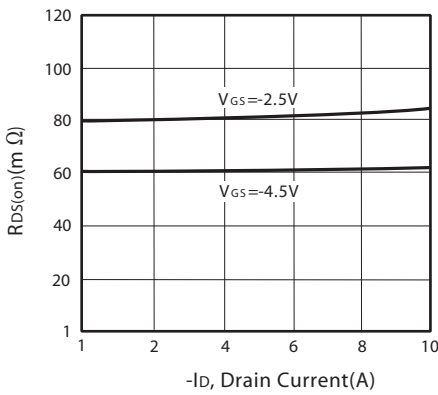


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

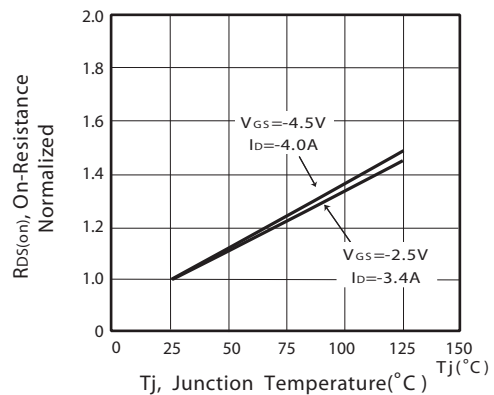


Figure 4. On-Resistance Variation with Drain Current and Temperature

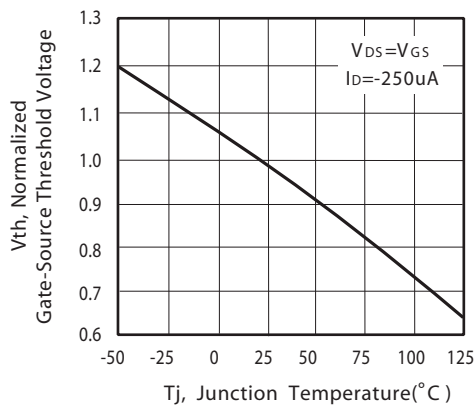


Figure 5. Gate Threshold Variation with Temperature

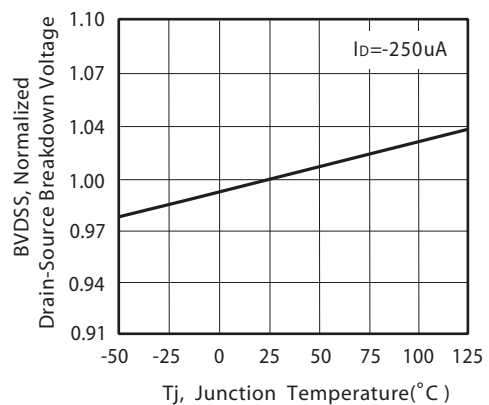


Figure 6. Breakdown Voltage Variation with Temperature

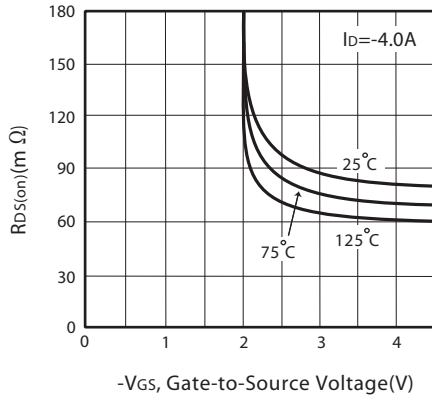


Figure 7. On-Resistance vs. Gate-Source Voltage

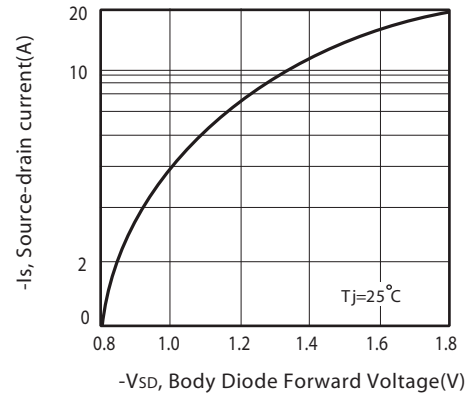


Figure 8. Body Diode Forward Voltage Variation with Source Current

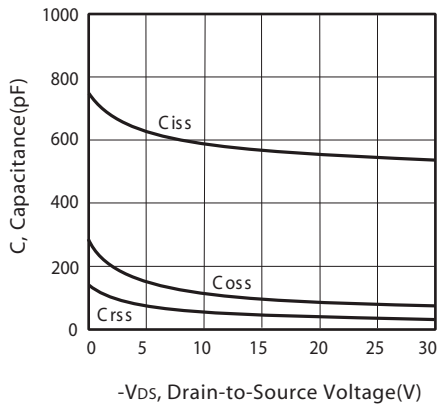


Figure 9. Capacitance

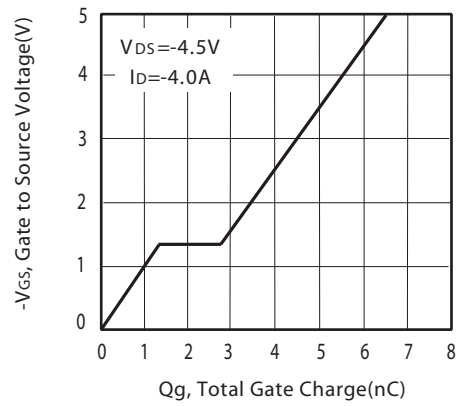


Figure 10. Gate Charge

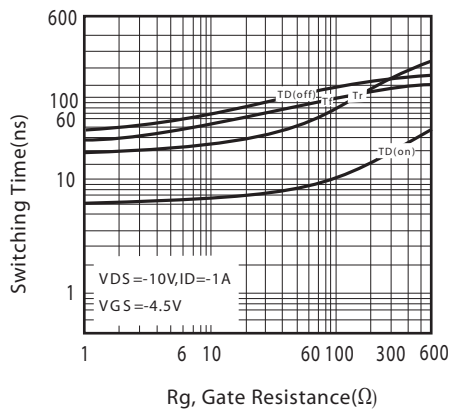


Figure 11. switching characteristics

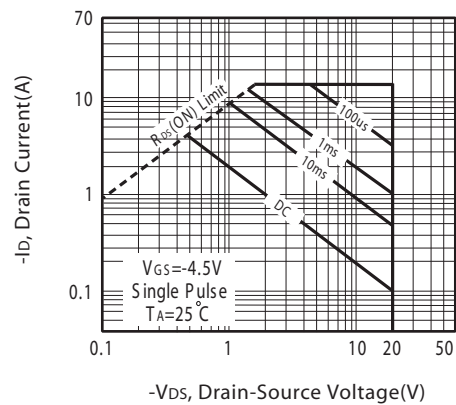


Figure 12. Maximum Safe Operating Area

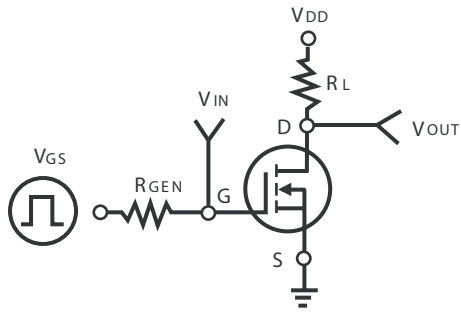


Figure 13. Switching Test Circuit

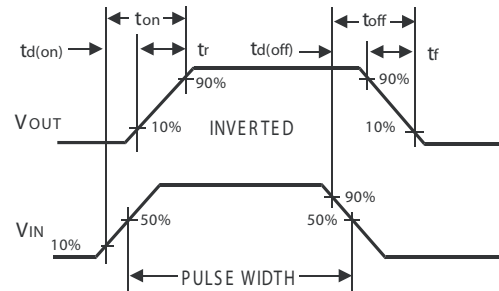
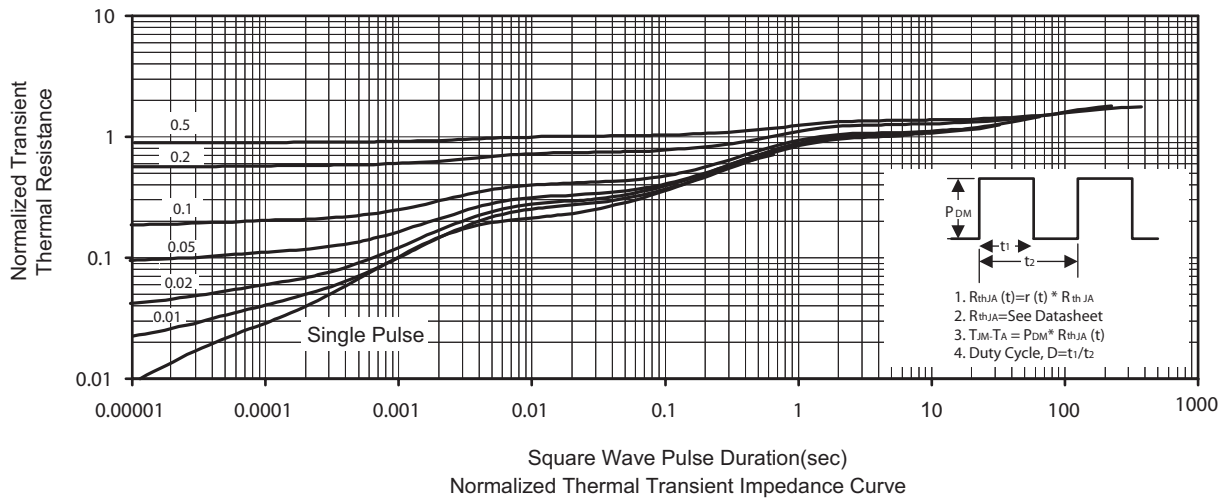


Figure 14. Switching Waveforms

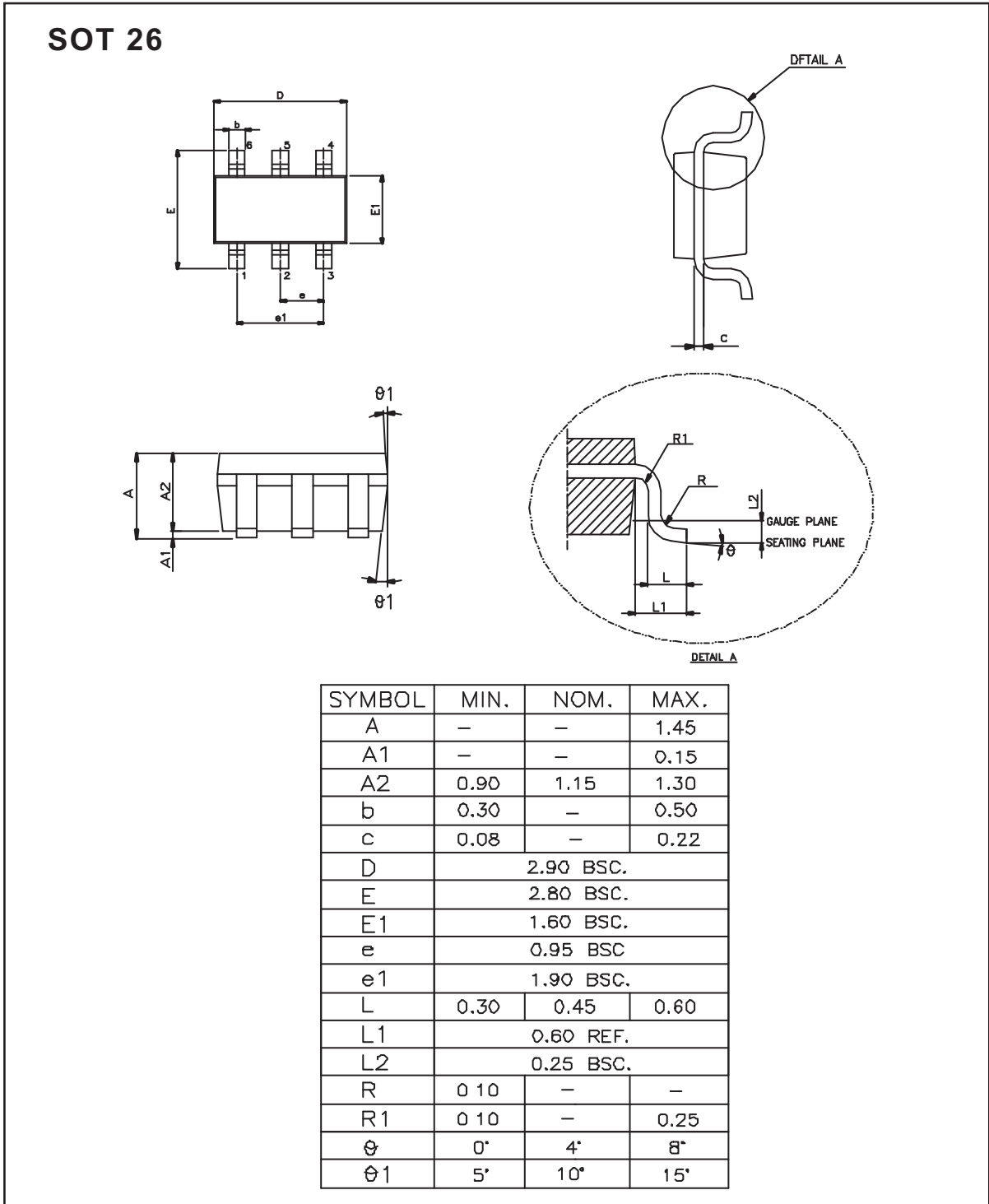


Normalized Thermal Impedance Curve

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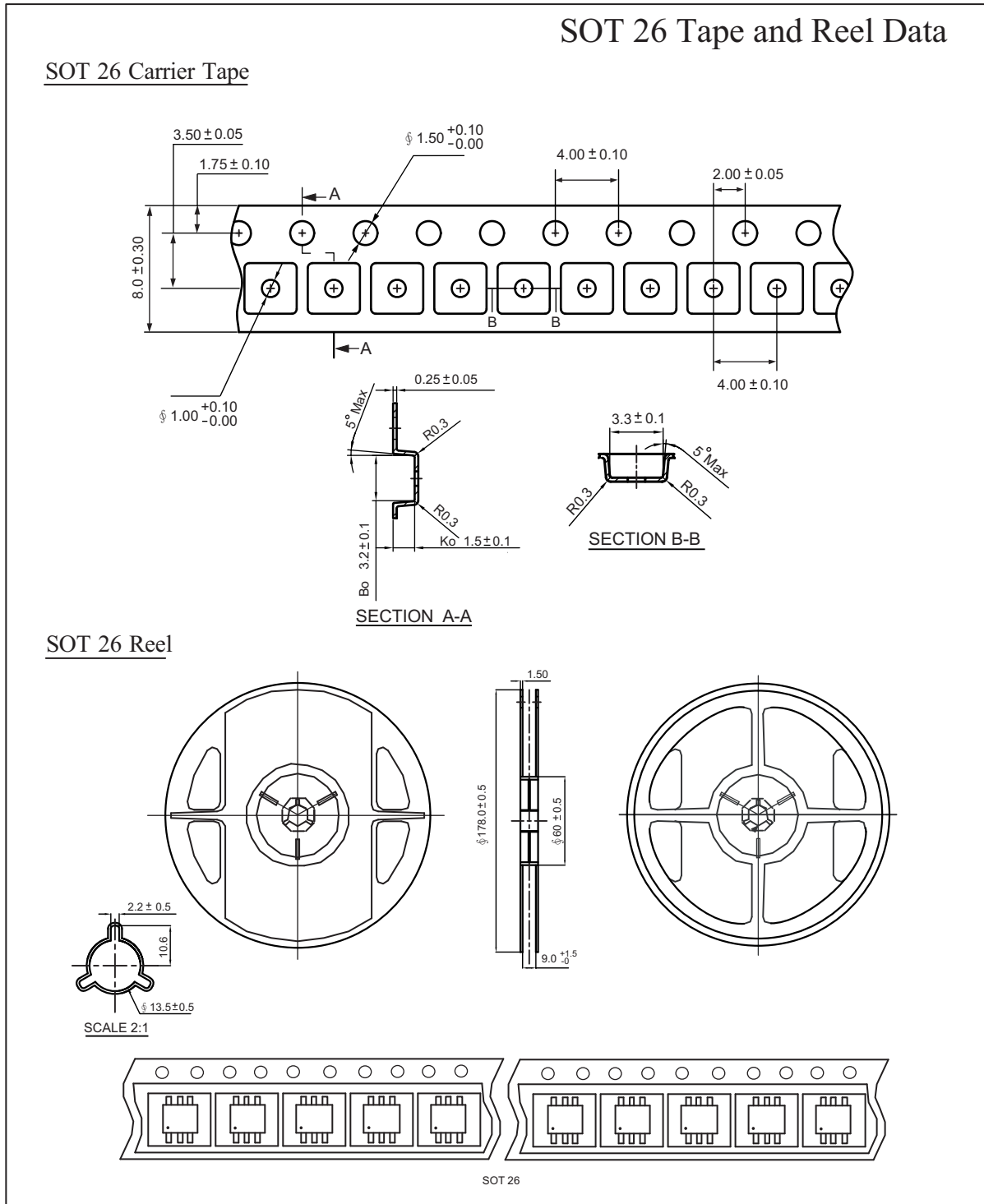
PACKAGE OUTLINE DIMENSIONS



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