



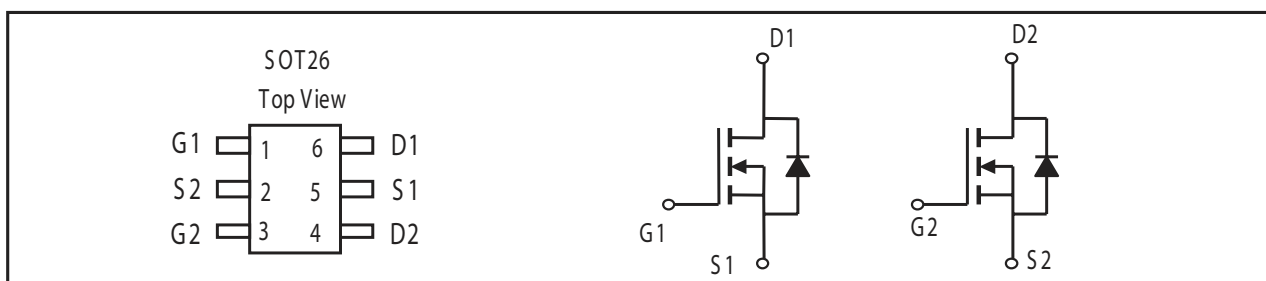
Dual N-Channel Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY

V_{DS}	I_D	$R_{DS(ON)} (m\Omega)_{Max}$
30V	4A	50 @ $V_{GS} = 10V$ 65 @ $V_{GS} = 4.5V$

FEATURES

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



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous @ $T_J=25^{\circ}C$ -Pulsed ^b	I_D	4	A
	I_{DM}	16	A
Drain-Source Diode Forward Current	I_S	1.25	A
Maximum Power Dissipation ^a	P_D	1.25	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient ^a	R_{thJA}	100	$^{\circ}C/W$
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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} =± 20V, V _{DS} =0V			±100	nA
ON CHARACTERISTICS ^b						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = 250uA	1	1.6	3	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =3A		40	50	m-ohm
		V _{GS} = 4.5V, I _D =2A		50	65	m-ohm
On-State Drain Current	I _{D(ON)}	V _{DS} = 5V, V _{GS} = 4.5V	10			A
Forward Transconductance	g _{FS}	V _{DS} = 5V, I _D =3A		7		S
DYNAMIC CHARACTERISTICS ^c						
Input Capacitance	C _{ISS}	V _{DS} =15V, V _{GS} = 0V f =1.0MHz		280		pF
Output Capacitance	C _{OSS}			70		pF
Reverse Transfer Capacitance	C _{RSS}			38		pF
SWITCHING CHARACTERISTICS ^c						
Turn-On Delay Time	t _{D(ON)}	V _{DD} = 15V, I _D = 1A, V _{GS} = 10V, R _{GEN} = 6 ohm		6		ns
Rise Time	t _r			5		ns
Turn-Off Delay Time	t _{D(OFF)}			18		ns
Fall Time	t _f			6		ns
Total Gate Charge	Q _g	V _{DS} =15V, I _D = 3A, V _{GS} =10V		5.9		nC
Gate-Source Charge	Q _{gs}			0.7		nC
Gate-Drain Charge	Q _{gd}			1.4		nC

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ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
DRAIN-SOURCE DIODE CHARACTERISTICS ^b						
Diode Forward Voltage	V_{SD}	$V_{GS} = 0\text{V}, I_S = 1.25\text{A}$		0.81	1.15	V

Notes

- a. Surface Mounted on FR4 Board, $t \leq 10\text{sec}$.
- b. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
- c. Guaranteed by design, not subject to production testing.

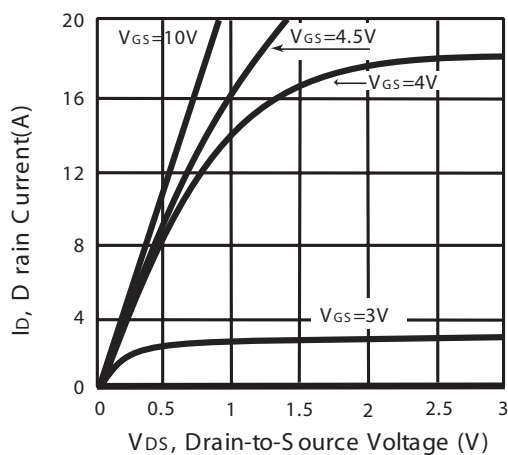


Figure 1. Output Characteristics

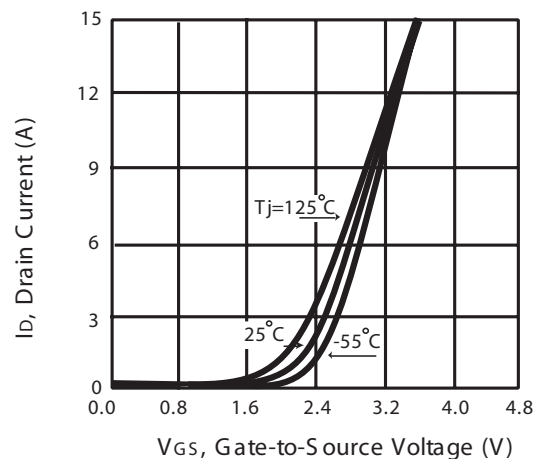


Figure 2. Transfer Characteristics

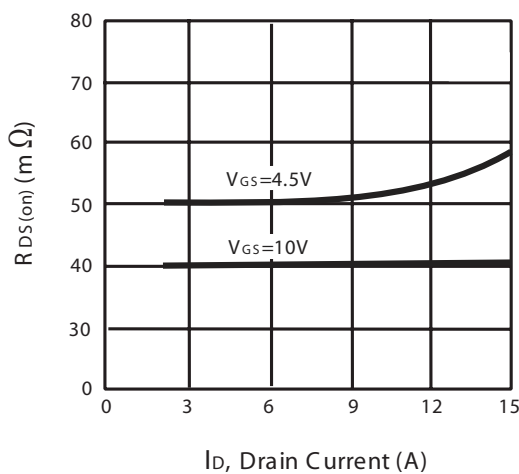


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

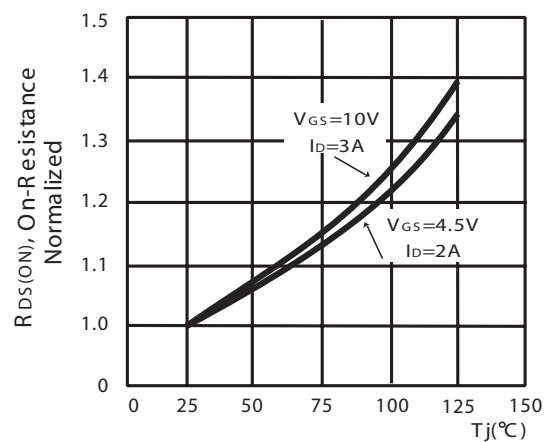


Figure 4. On-Resistance Variation with Temperature

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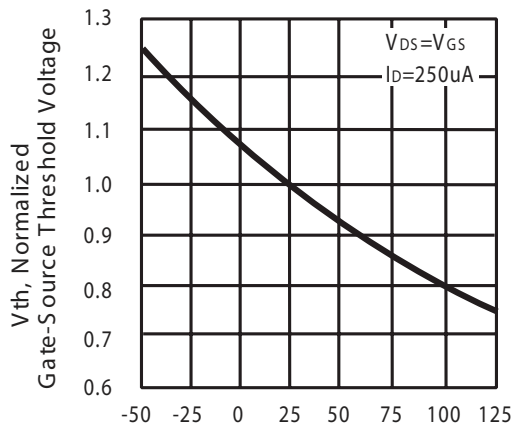


Figure 5. Gate Threshold Variation with Temperature

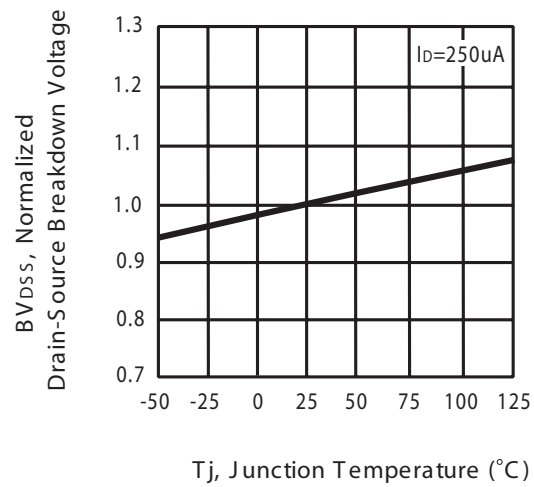


Figure 6. Breakdown Voltage Variation with Temperature

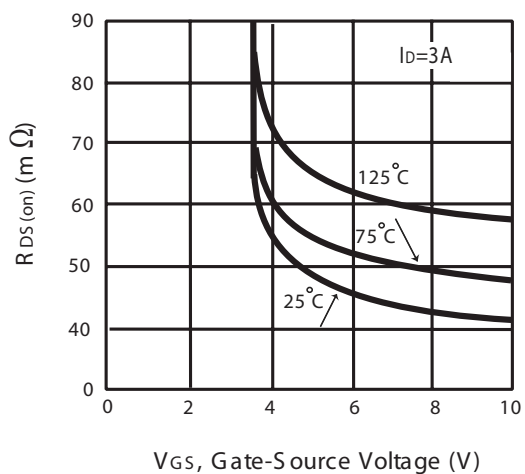


Figure 7. On-Resistance vs. Gate-Source Voltage

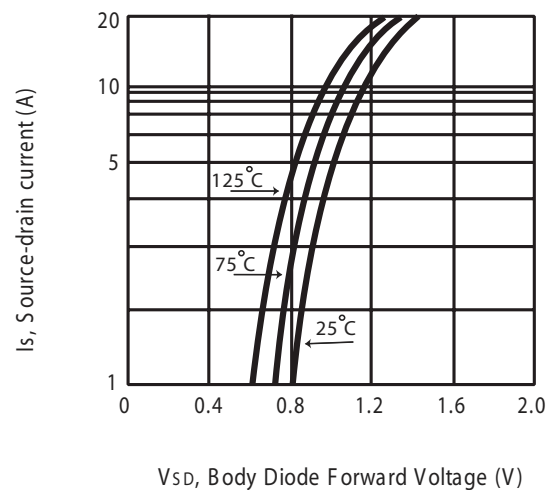


Figure 8. Body Diode Forward Voltage Variation with Source Current

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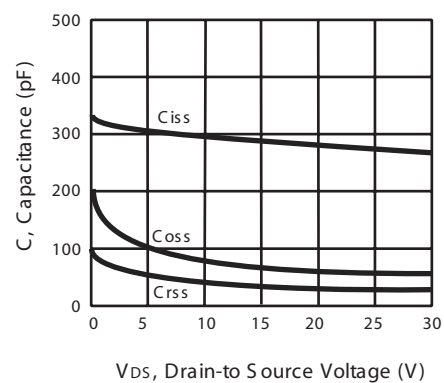


Figure 9. Capacitance

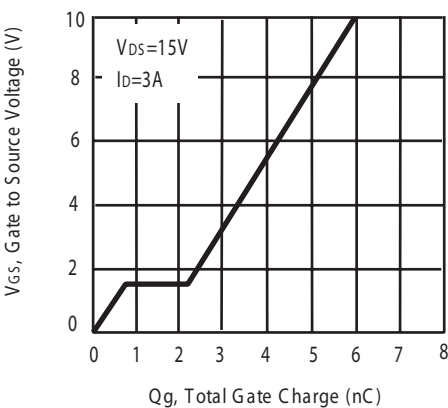


Figure 10. Gate Charge

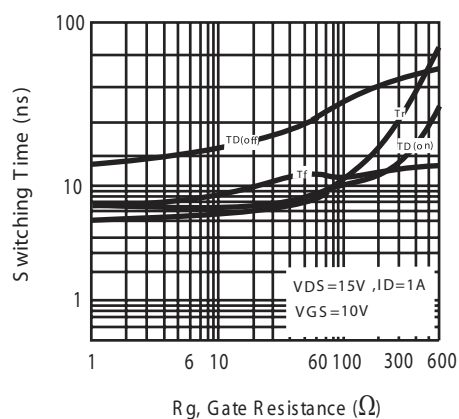


Figure 11. switching characteristics

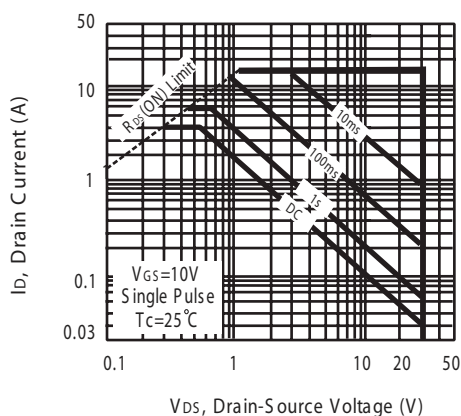


Figure 12. Maximum Safe Operating Area

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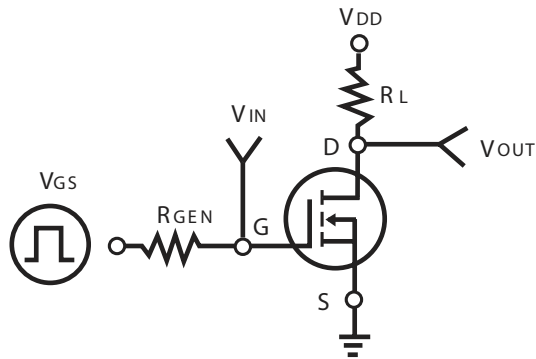


Figure 11. Switching Test Circuit

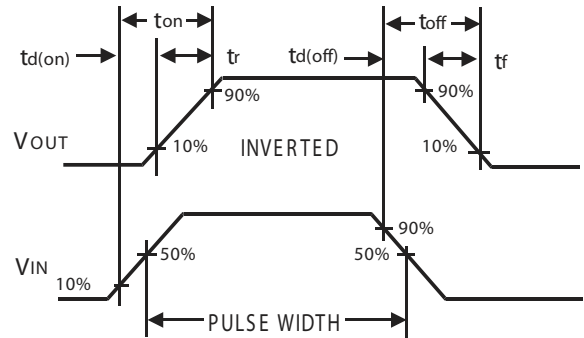
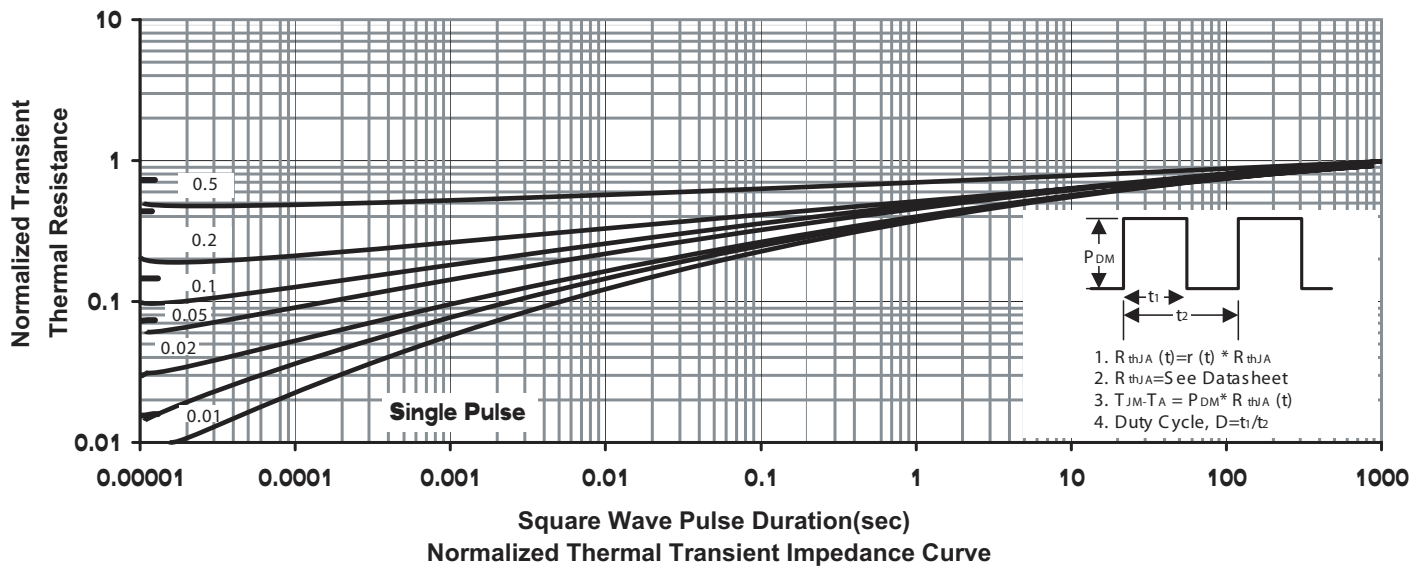


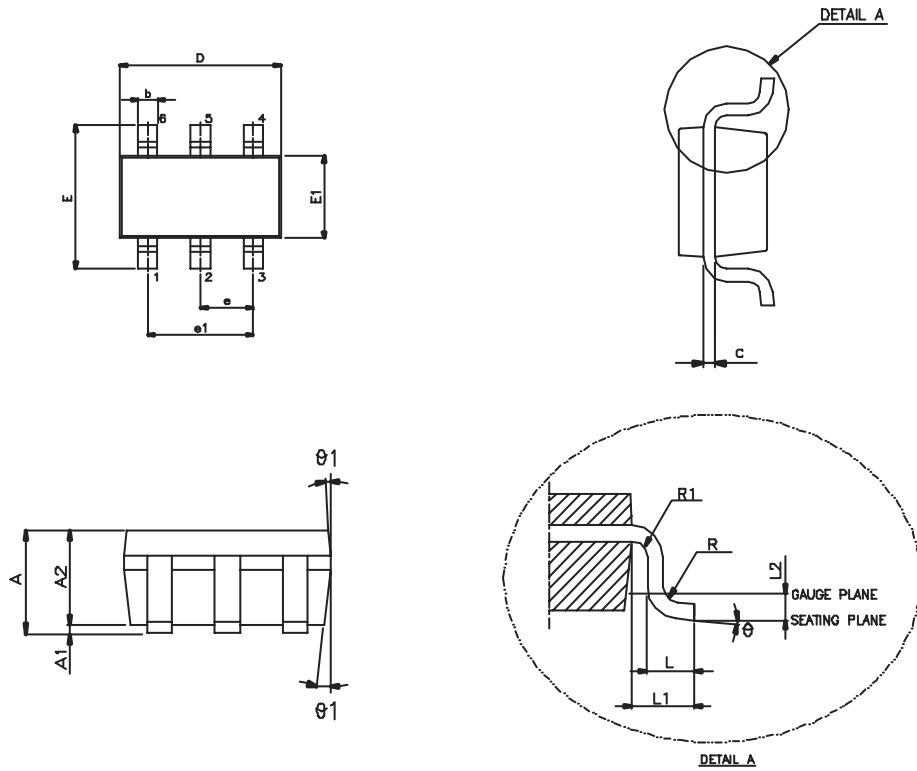
Figure 12. Switching Waveforms



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PACKAGE OUTLINE DIMENSIONS

SOT26

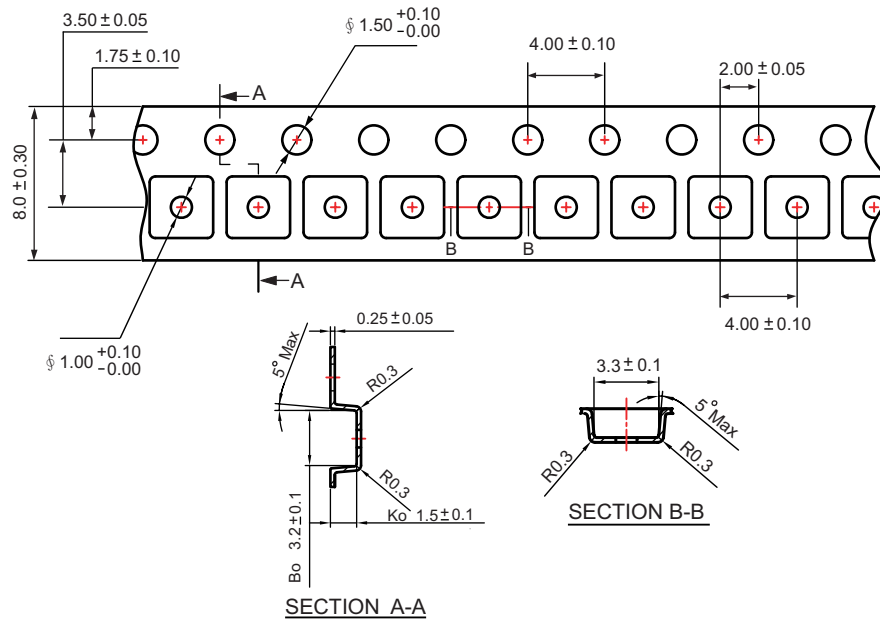


SYMBOL	MIN.	NOM.	MAX.
A	—	—	1.45
A1	—	—	0.15
A2	0.90	1.15	1.30
b	0.30	—	0.50
c	0.08	—	0.22
D	2.90 BSC.		
E	2.80 BSC.		
E1	1.60 BSC.		
e	0.95 BSC.		
e1	1.90 BSC.		
L	0.30	0.45	0.60
L1	0.60 REF.		
L2	0.25 BSC.		
R	0.10	—	—
R1	0.10	—	0.25
θ	0°	4°	8°
$\theta 1$	5°	10°	15°

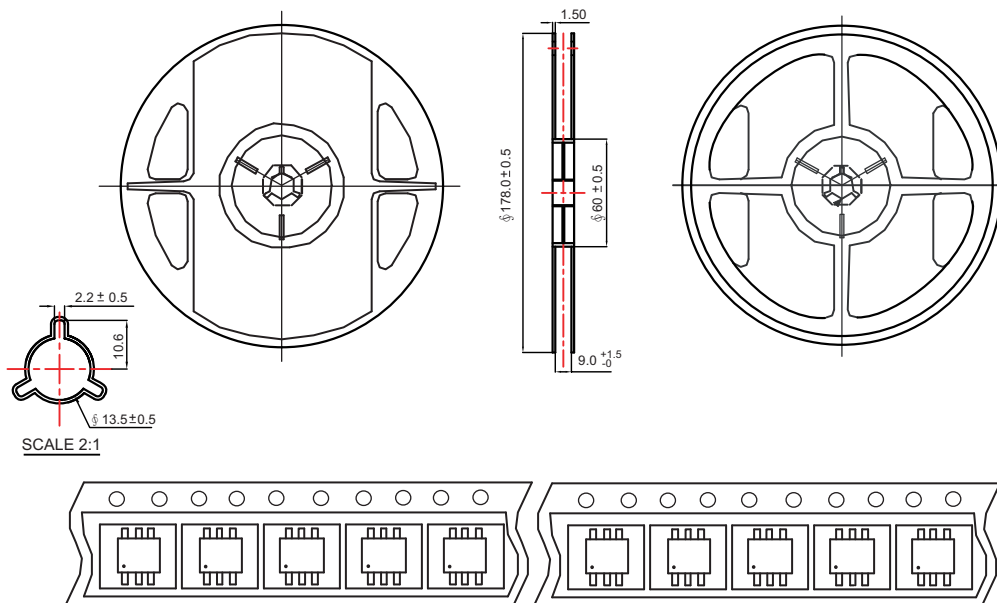
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SOT 26 Tape and Reel Data

SOT 26 Carrier Tape



SOT 26 Reel



SOT 26