

Thermal Resistance

Parameter	Symbol	Value	Unit
Channel - soldering point ¹⁾ BF2030/ BF2030R BF2030W	R_{thchs}	≤370 ≤280	K/W

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Drain-source breakdown voltage $I_D = 20 \mu\text{A}$, $V_{G1S} = 0$, $V_{G2S} = 0$	$V_{(BR)DS}$	10	-	-	V
Gate1-source breakdown voltage $+I_{G1S} = 10 \text{ mA}$, $V_{G2S} = 0$, $V_{DS} = 0$	$+V_{(BR)G1SS}$	6	-	15	
Gate2-source breakdown voltage $+I_{G2S} = 10 \text{ mA}$, $V_{G1S} = 0$, $V_{DS} = 0$	$+V_{(BR)G2SS}$	6	-	15	
Gate1-source leakage current $V_{G1S} = 5 \text{ V}$, $V_{G2S} = 0$, $V_{DS} = 0$	$+I_{G1SS}$	-	-	50	nA
Gate2-source leakage current $V_{G2S} = 5 \text{ V}$, $V_{G1S} = 0$, $V_{DS} = 0$	$+I_{G2SS}$	-	-	50	
Drain current $V_{DS} = 5 \text{ V}$, $V_{G1S} = 0$, $V_{G2S} = 4 \text{ V}$	I_{DSS}	-	-	50	μA
Drain-source current $V_{DS} = 5 \text{ V}$, $V_{G2S} = 4 \text{ V}$, $R_{G1} = 100 \text{ k}\Omega$	I_{DSX}	-	12	-	mA
Gate1-source pinch-off voltage $V_{DS} = 5 \text{ V}$, $V_{G2S} = 4 \text{ V}$, $I_D = 20 \mu\text{A}$	$V_{G1S(p)}$	0.3	0.5	-	V
Gate2-source pinch-off voltage $V_{DS} = 5 \text{ V}$, $I_D = 20 \mu\text{A}$	$V_{G2S(p)}$	0.3	0.6	-	

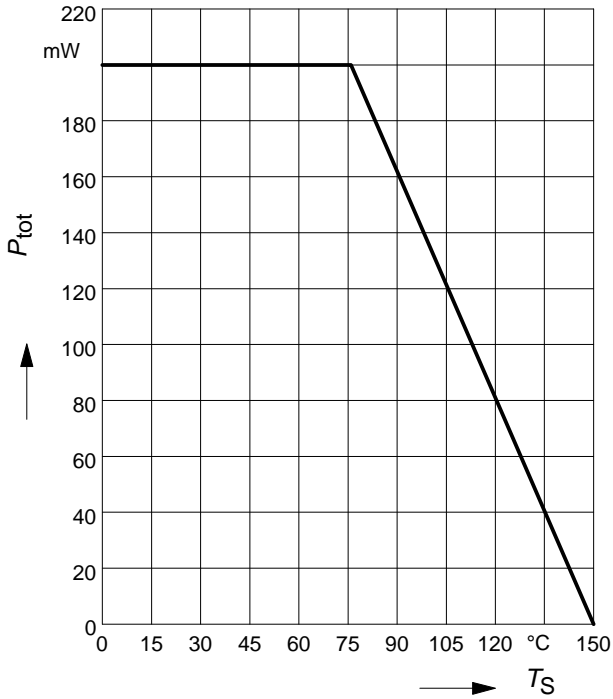
¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

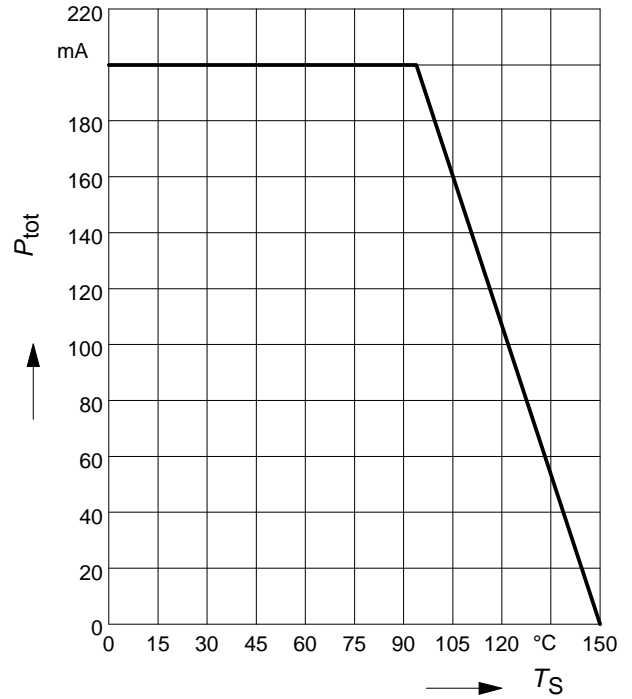
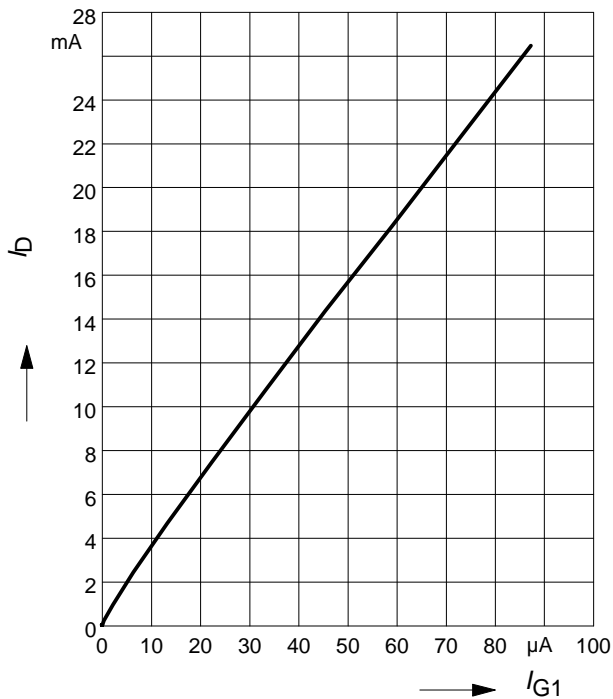
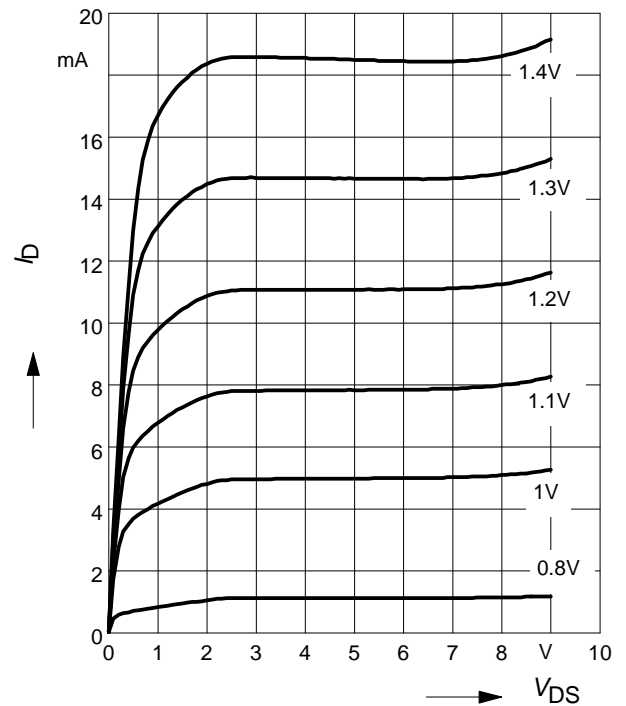
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics (verified by random sampling)					
Forward transconductance $V_{DS} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{G2S} = 4\text{ V}$	g_{fs}	27	31	-	mS
Gate1 input capacitance $V_{DS} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{G2S} = 4\text{ V}$, $f = 10\text{ MHz}$	C_{g1ss}	-	2.4	2.8	pF
Output capacitance $V_{DS} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{G2S} = 4\text{ V}$, $f = 10\text{ MHz}$	C_{dss}	-	1.3	-	
Power gain $V_{DS} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{G2S} = 4\text{ V}$, $f = 800\text{ MHz}$	G_p	20	23	-	dB
Noise figure $V_{DS} = 5\text{ V}$, $I_D = 10\text{ mA}$, $V_{G2S} = 4\text{ V}$, $f = 800\text{ MHz}$	F	-	1.5	2.2	dB
Gain control range $V_{DS} = 5\text{ V}$, $V_{G2S} = 4...0\text{ V}$, $f = 800\text{ MHz}$	ΔG_p	40	50	-	

Total power dissipation $P_{tot} = f(T_S)$

BF2030, BF2030R


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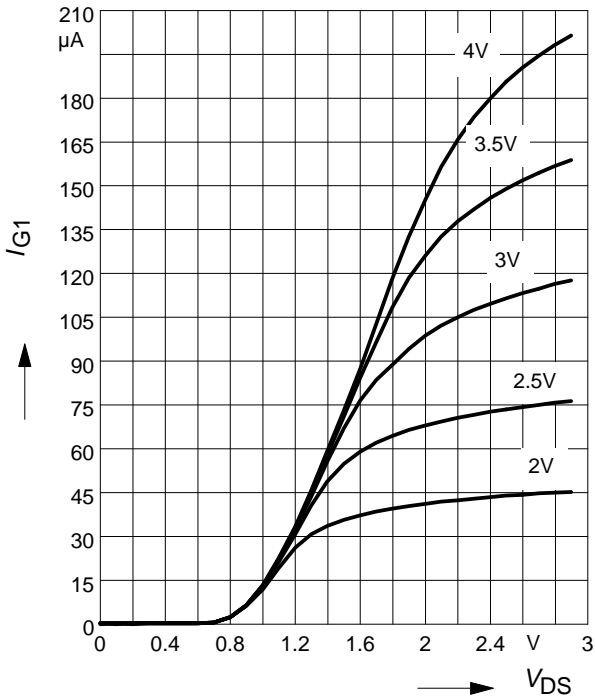
BF2030W


Drain current $I_D = f(I_{G1})$
 $V_{G2S} = 4V$

Output characteristics $I_D = f(V_{DS})$
 $V_{G2S} = 4V$
 $V_{G1S} = \text{Parameter}$


Gate 1 current $I_{G1} = f(V_{G1S})$

$V_{DS} = 5V$

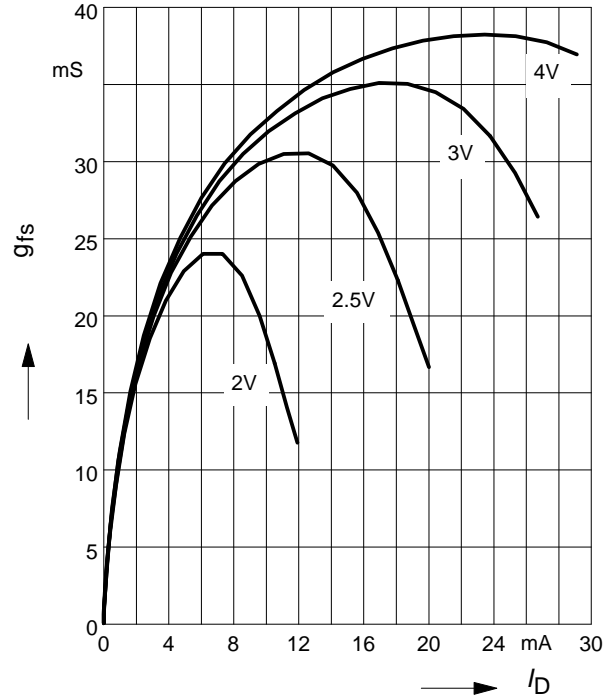
$V_{G2S} = \text{Parameter}$



Gate 1 forward transconductance

$g_{fs} = f(I_D)$

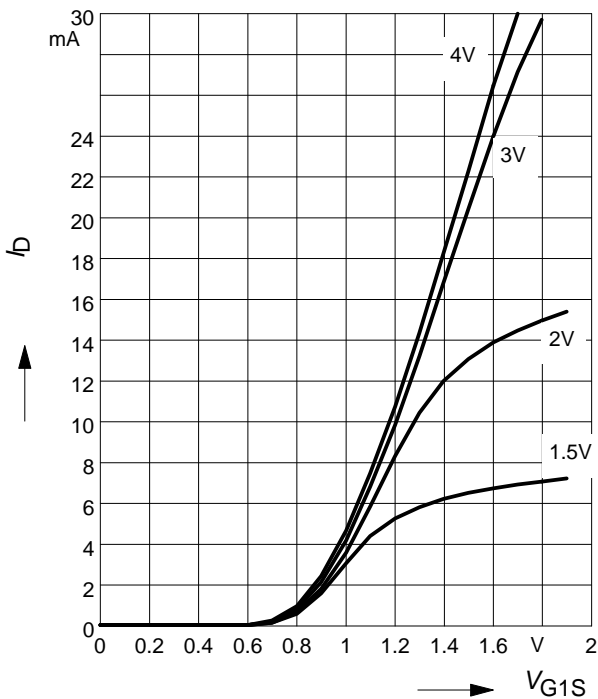
$V_{DS} = 5V, V_{G2S} = \text{Parameter}$



Drain current $I_D = f(V_{G1S})$

$V_{DS} = 5V$

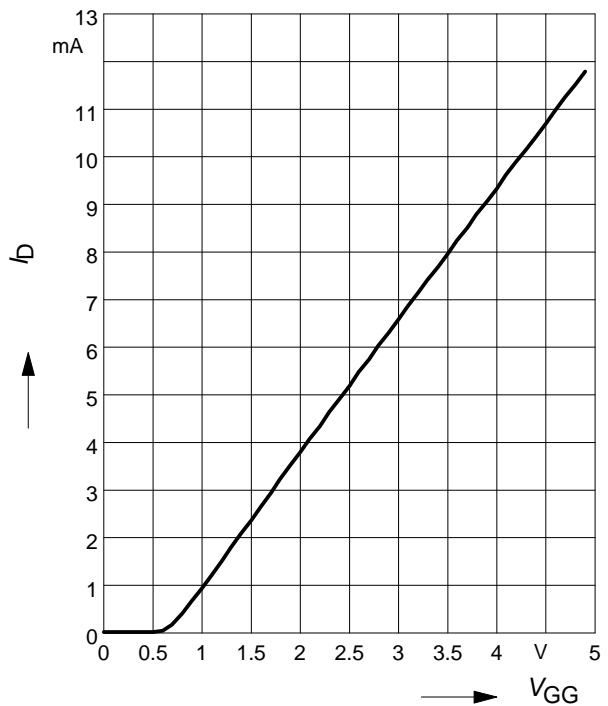
$V_{G2S} = \text{Parameter}$



Drain current $I_D = f(V_{GG})$

$V_{DS} = 5V, V_{G2S} = 4V, R_{G1} = 100k\Omega$

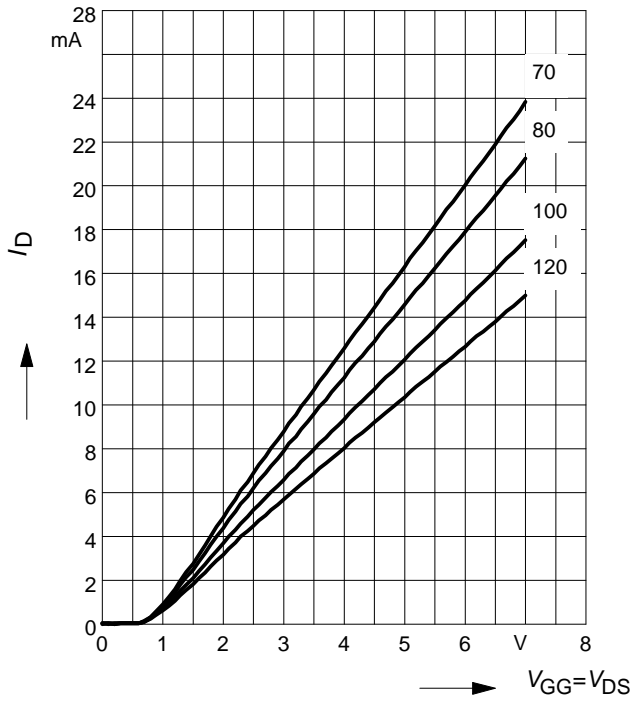
(connected to V_{GG} , $V_{GG} = \text{gate1 supply voltage}$)



Drain current $I_D = f(V_{GG})$

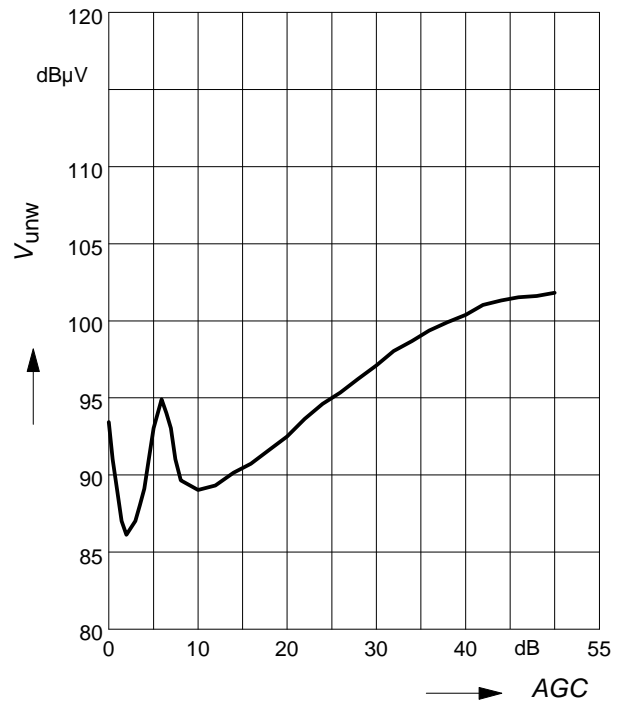
$V_{G2S} = 4V$

$R_{G1} = \text{Parameter in } k\Omega$

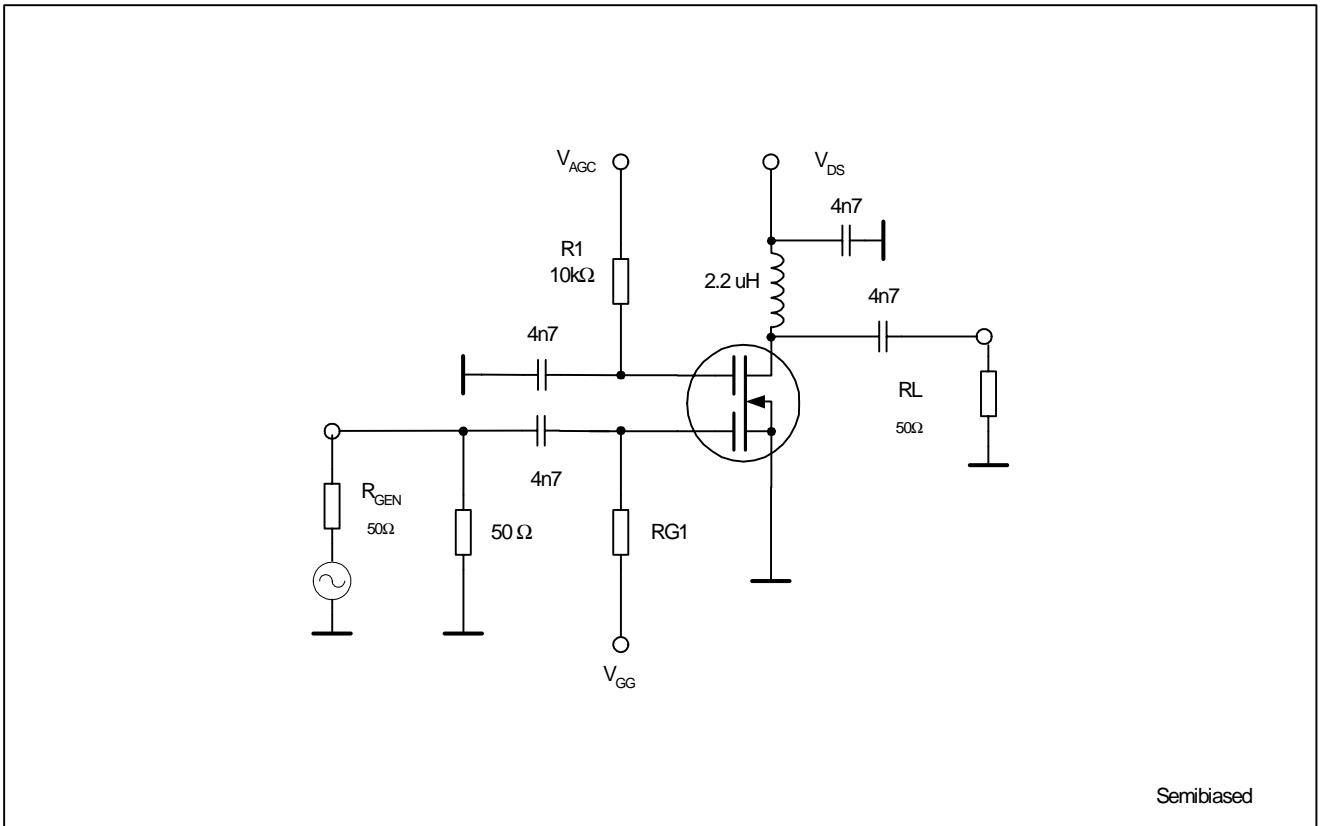


Crossmodulation $V_{unw} = (AGC)$

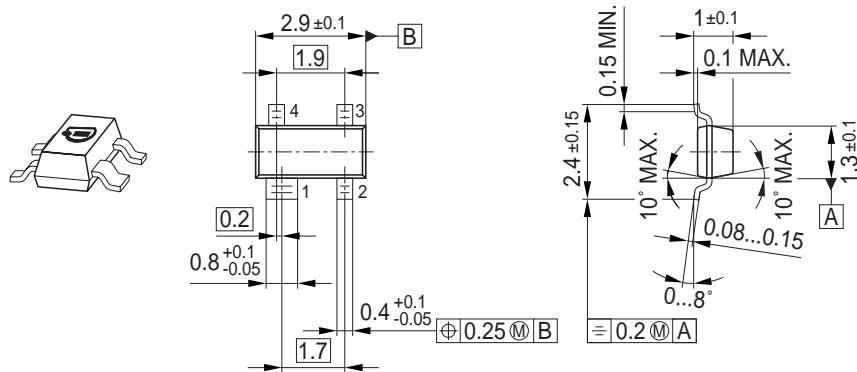
$V_{DS} = 5 V$



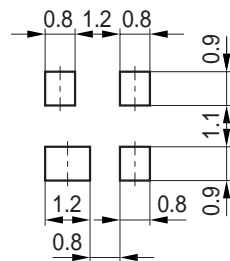
Cossmodulation test circuit



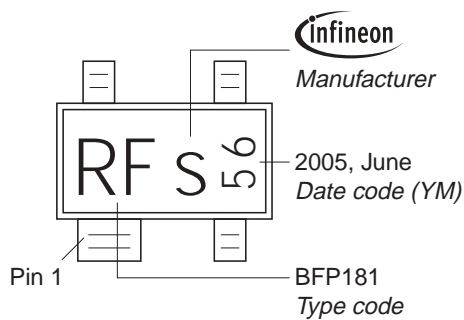
Package Outline



Foot Print

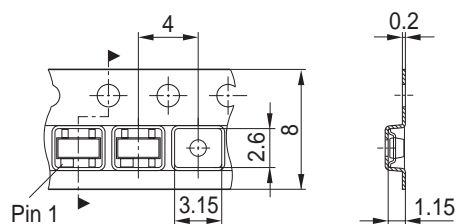


Marking Layout (Example)

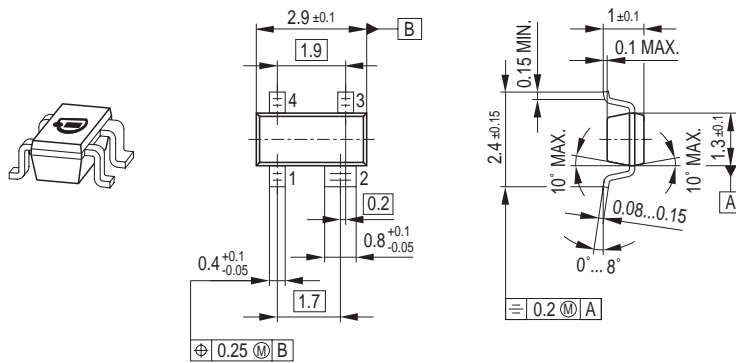


Standard Packing

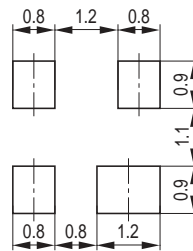
Reel $\varnothing 180 \text{ mm}$ = 3.000 Pieces/Reel
 Reel $\varnothing 330 \text{ mm}$ = 10.000 Pieces/Reel



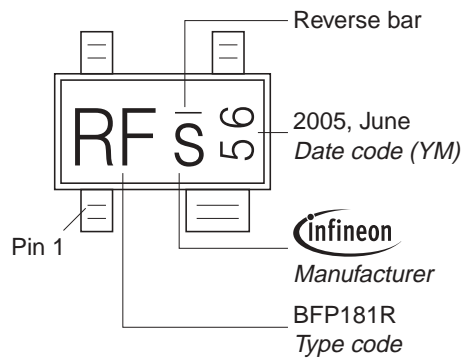
Package Outline



Foot Print

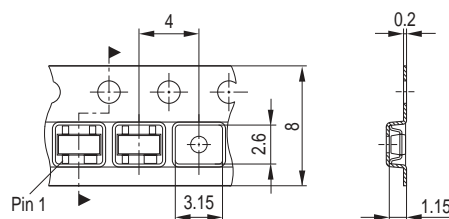


Marking Layout (Example)

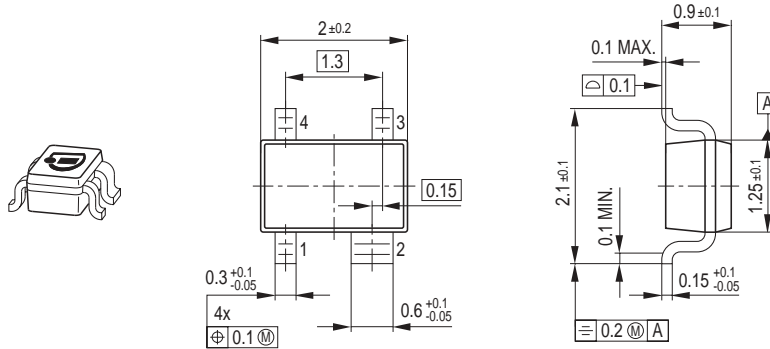


Standard Packing

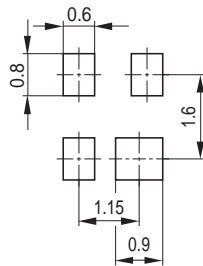
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



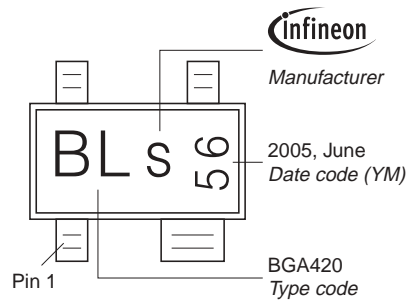
Package Outline



Foot Print

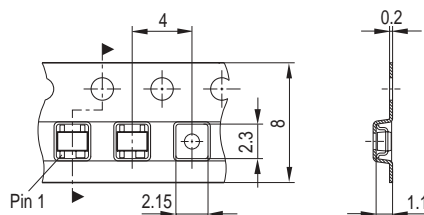


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
 Reel ø330 mm = 10.000 Pieces/Reel



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