

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

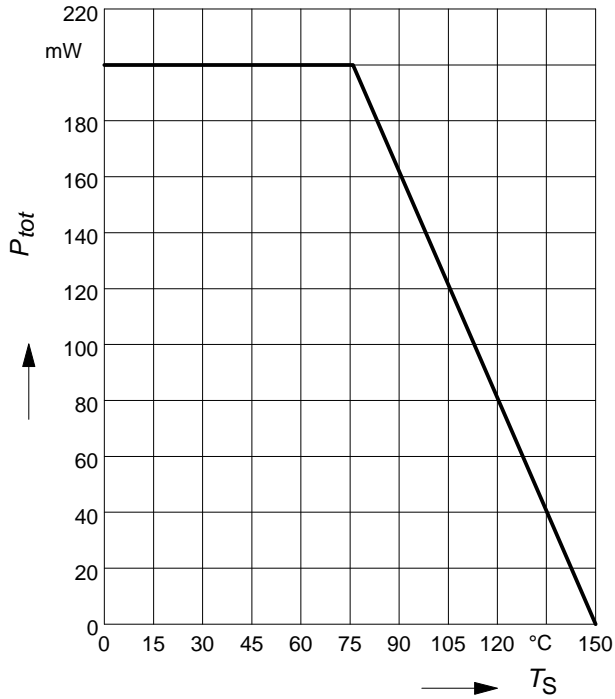
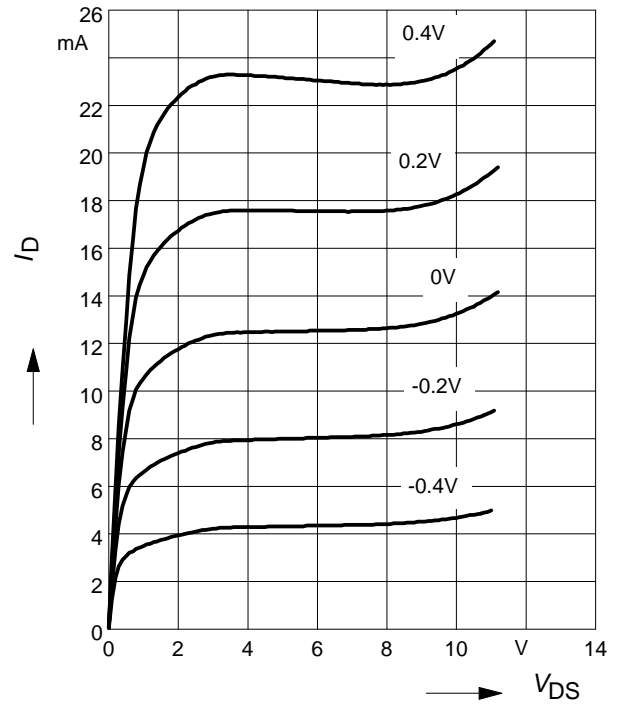
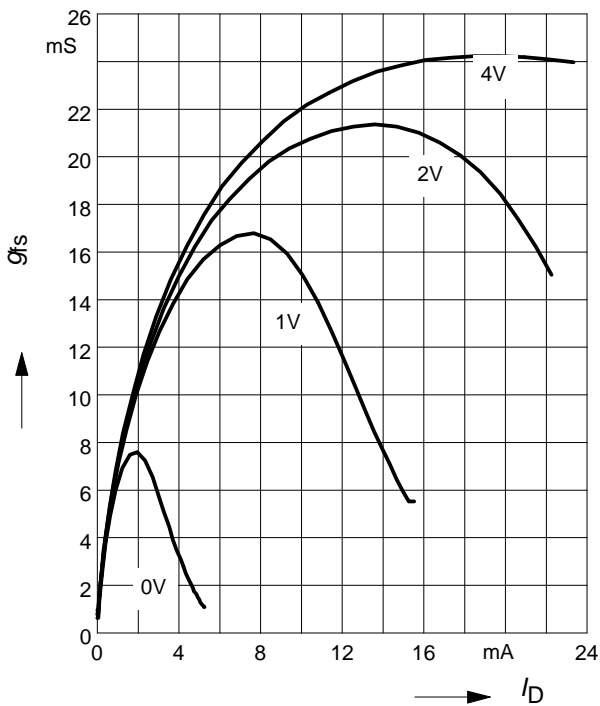
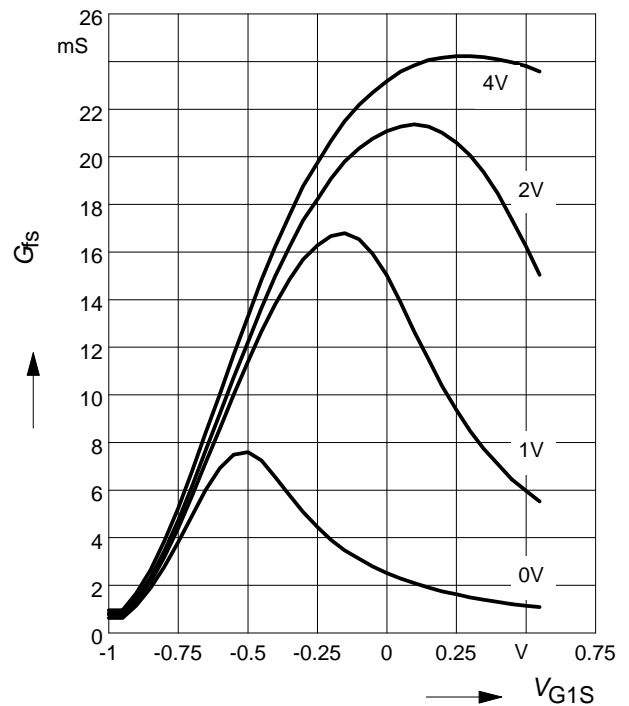
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Drain-source breakdown voltage $I_D = 10 \mu\text{A}$ , $V_{G1S} = -4 \text{ V}$ , $V_{G2S} = -4 \text{ V}$	$V_{(BR)DS}$	12	-	-	V
Gate 1 source breakdown voltage $\pm I_{G2S} = 10 \text{ mA}$ , $V_{G2S} = V_{DS} = 0$	$\pm V_{(BR)G1SS}$	8	-	12	
Gate2 source breakdown voltage $\pm I_{G2S} = 10 \text{ mA}$ , $V_{G2S} = V_{DS} = 0$	$\pm V_{(BR)G2SS}$	8	-	12	
Gate 1 source leakage current $\pm V_{G1S} = 5 \text{ V}$ , $V_{G2S} = V_{DS} = 0$	$\pm I_{G1SS}$	-	-	50	nA
Gate 2 source leakage current $\pm V_{G2S} = 5 \text{ V}$ , $V_{G2S} = V_{DS} = 0$	$\pm I_{G2SS}$	-	-	50	nA
Drain current $V_{DS} = 8 \text{ V}$ , $V_{G1S} = 0$ , $V_{G2S} = 4 \text{ V}$	$I_{DSS}$	5	9	15	mA
Gate 1 source pinch-off voltage $V_{DS} = 8 \text{ V}$ , $V_{G2S} = 4 \text{ V}$ , $I_D = 20 \mu\text{A}$	$-V_{G1S(p)}$	-	0.8	2.5	V
Gate 2 source pinch-off voltage $V_{DS} = 8 \text{ V}$ , $V_{G1S} = 0$ , $I_D = 20 \mu\text{A}$	$-V_{G2S(p)}$	-	0.8	2	

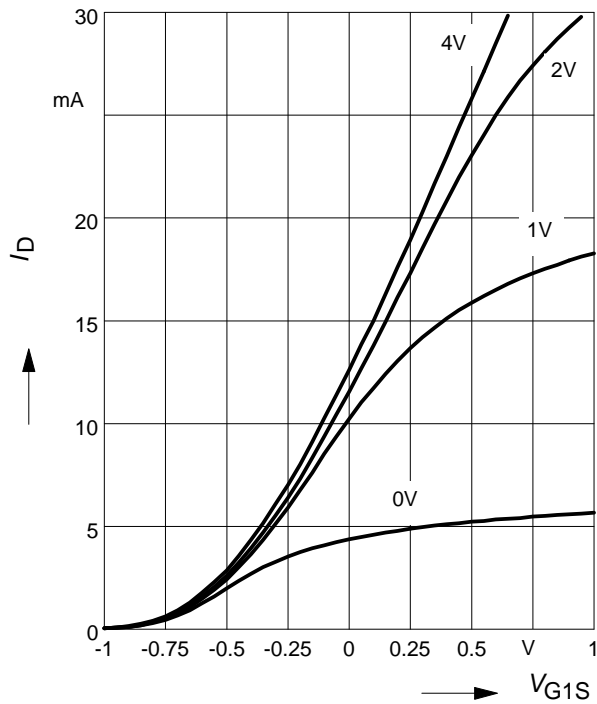
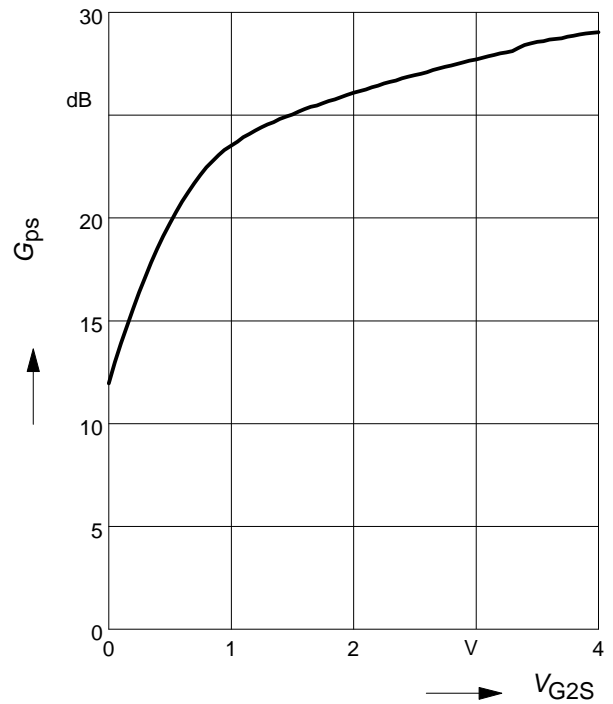
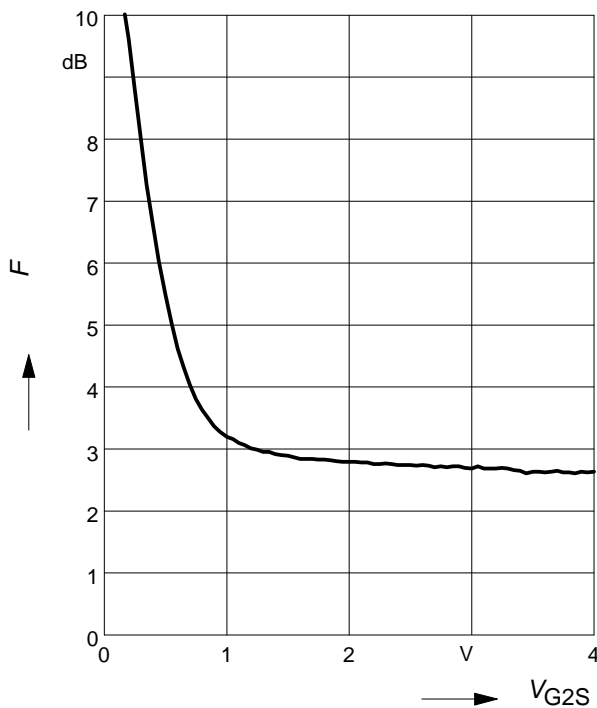
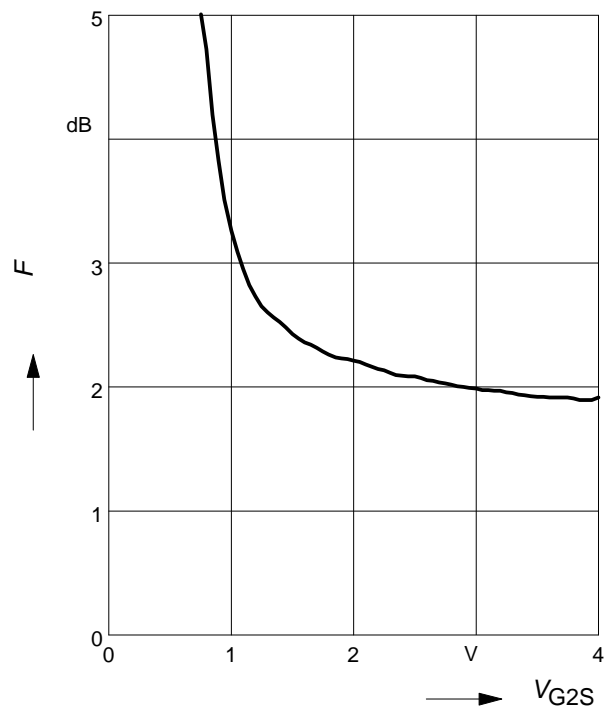
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>AC Characteristics</b> (verified by random sampling)					
Forward transconductance $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$	$g_{fs}$	20	24	-	-
Gate1 input capacitance $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$ , $f = 10\text{ MHz}$	$C_{g1ss}$	-	2.1	2.5	pF
Gate 2 input capacitance $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$ , $f = 10\text{ MHz}$	$C_{g2ss}$	-	1.2	-	pF
Feedback capacitance $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$ , $f = 10\text{ MHz}$	$C_{dg1}$	-	25	-	fF
Output capacitance $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$ , $f = 10\text{ MHz}$	$C_{dss}$	-	1.1	-	pF
Power gain $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$ , $f = 45\text{ MHz}$ $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$ , $f = 800\text{ MHz}$	$G_p$	-	28	-	dB
		-	20	-	
Noise figure $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$ , $f = 45\text{ MHz}$ $V_{DS} = 8\text{ V}$ , $I_D = 10\text{ mA}$ , $V_{G2S} = 4\text{ V}$ , $f = 800\text{ MHz}$	$F$	-	2.8	-	dB
		-	1.8	-	
Gain control range $V_{DS} = 8\text{ V}$ , $V_{G2S} = 4 \dots -2\text{ V}$ , $f = 800\text{ MHz}$	$\Delta G_p$	40	50	-	

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

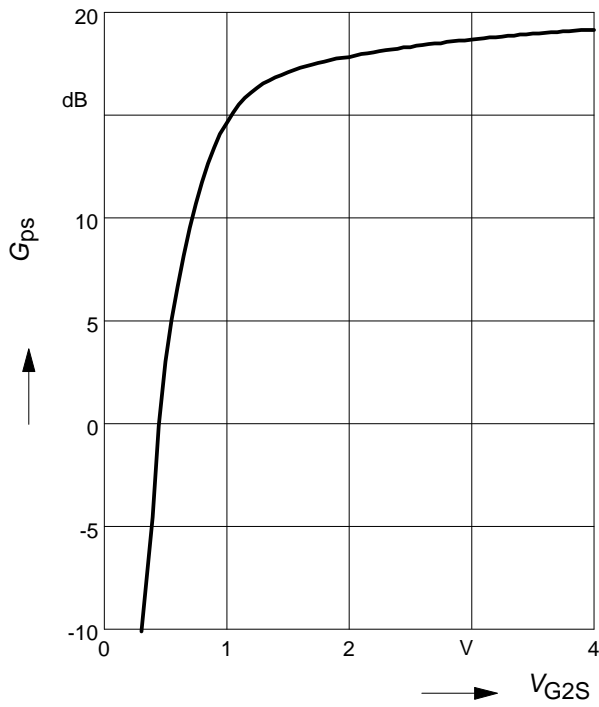
BF998, BF998R


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

**Gate 1 forward transconductance  $g_{fs} = f(I_D)$** 
 $g_{fs} = f(I_D)$ 
 $V_{DS} = 5\text{ V}, V_{G2S} = \text{Parameter}$ 

**Gate 1 forward transconductance  $g_{fs1} = f(V_{G1S})$** 
 $g_{fs1} = f(V_{G1S})$ 


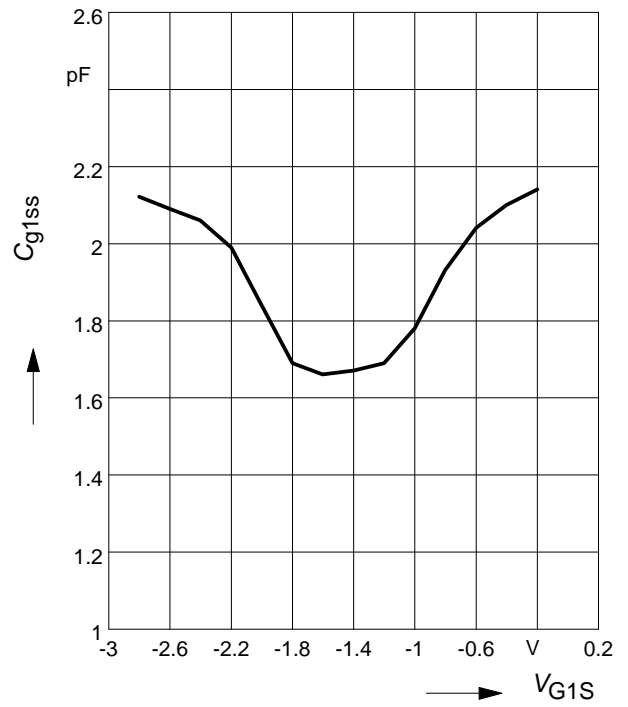
**Drain current  $I_D = f(V_{G1S})$** 
 $V_{DS} = 5V$ 
 $V_{G2S} = \text{Parameter}$ 

**Power gain  $G_{ps} = f(V_{G2S})$** 
 $f = 45 \text{ MHz}$ 

**Noise figure  $F = f(V_{G2S})$** 
 $f = 45 \text{ MHz}$ 

**Noise figure  $F = f(V_{G2S})$** 
 $f = 800 \text{ MHz}$ 


**Power gain  $G_{ps} = f(V_{G2S})$**

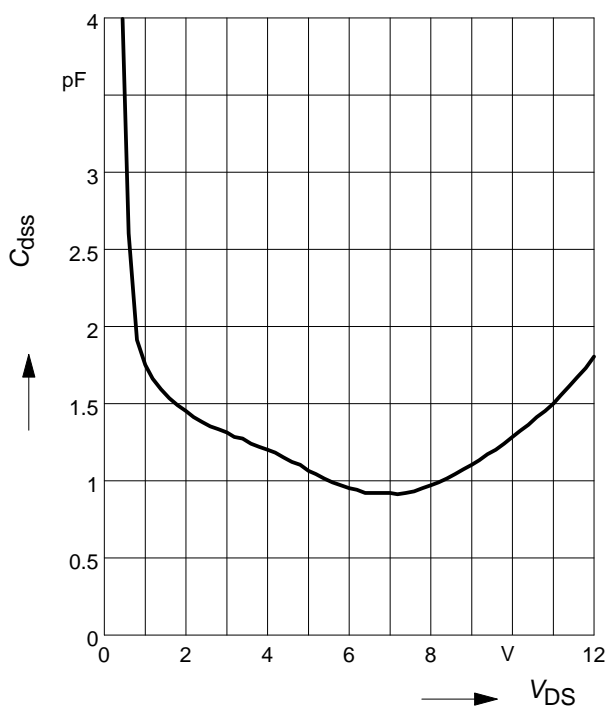
$f = 800$  MHz



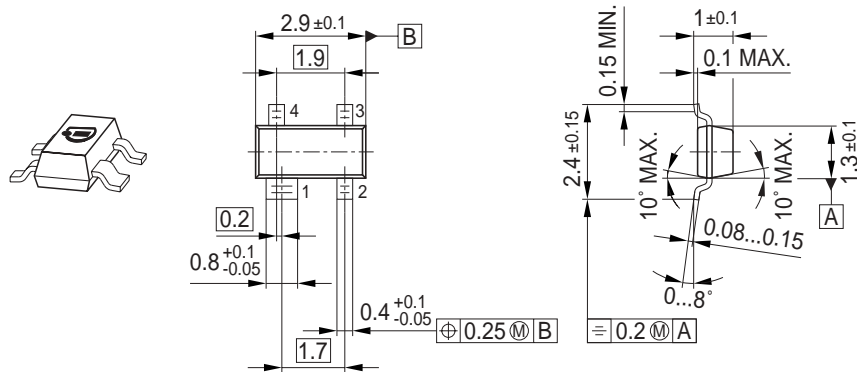
**Gate 1 input capacitance  $C_{g1ss} = f(V_{G1S})$**



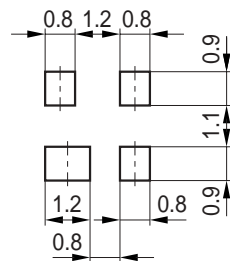
**Output capacitance  $C_{dss} = f(V_{DS})$**



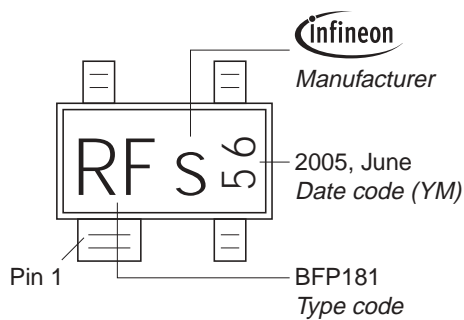
Package Outline



Foot Print

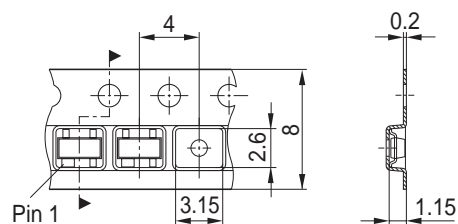


Marking Layout (Example)

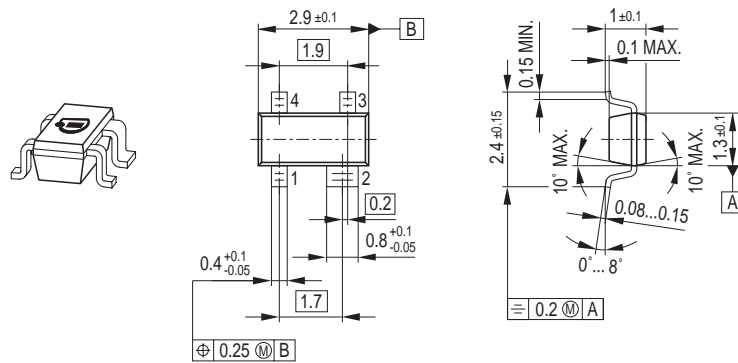


Standard Packing

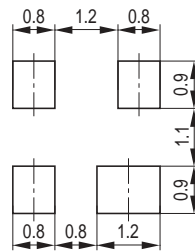
Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø330 mm = 10.000 Pieces/Reel



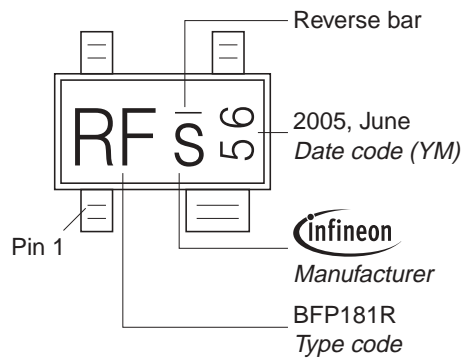
Package Outline



Foot Print

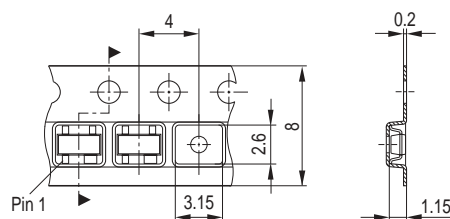


Marking Layout (Example)



Standard Packing

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



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