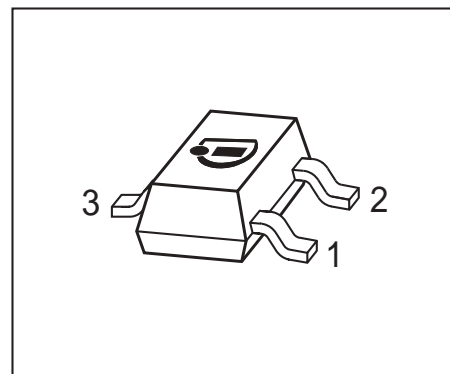


## Silicon N-Channel MOSFET Triode

- For high-frequency stages up to 300 MHz preferably in FM applications
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



**ESD (Electrostatic discharge)** sensitive device, observe handling precaution!

Type	Marking	Pin Configuration						Package
BF999	LBs	1=G	2=D	3=S	-	-	-	SOT23

### Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-source voltage	$V_{DS}$	20	V
Continuous drain current	$I_D$	30	mA
Gate-source peak current	$\pm I_{GSM}$	10	mA
Total power dissipation $T_S \leq 76^\circ\text{C}$	$P_{tot}$	200	mW
Storage temperature	$T_{stg}$	-55 ... 150	$^\circ\text{C}$
Channel temperature	$T_{ch}$	150	

### Thermal Resistance

Parameter	Symbol	Value	Unit
Channel - soldering point <sup>2)</sup>	$R_{thchs}$	$\leq 370$	K/W

<sup>1)</sup>Pb-containing package may be available upon special request

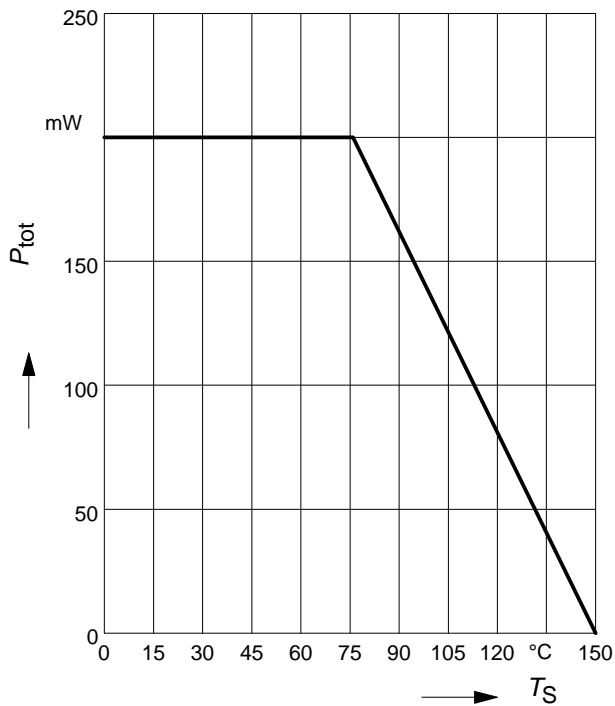
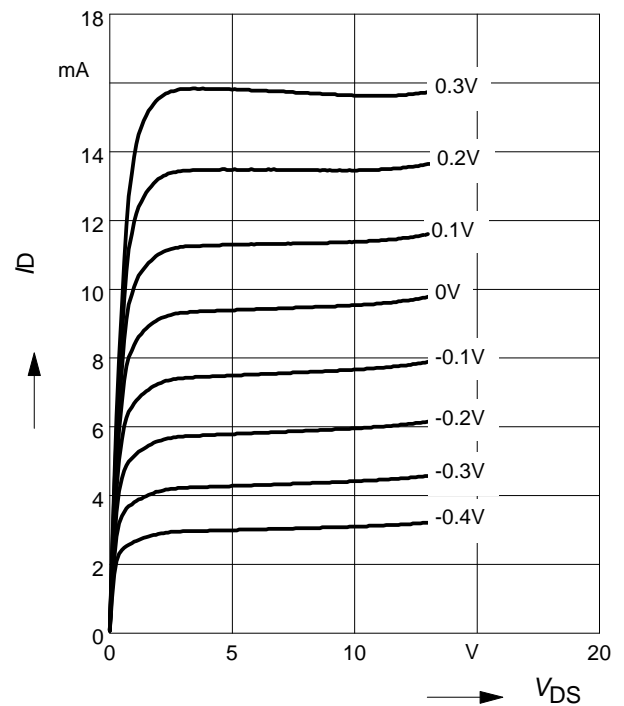
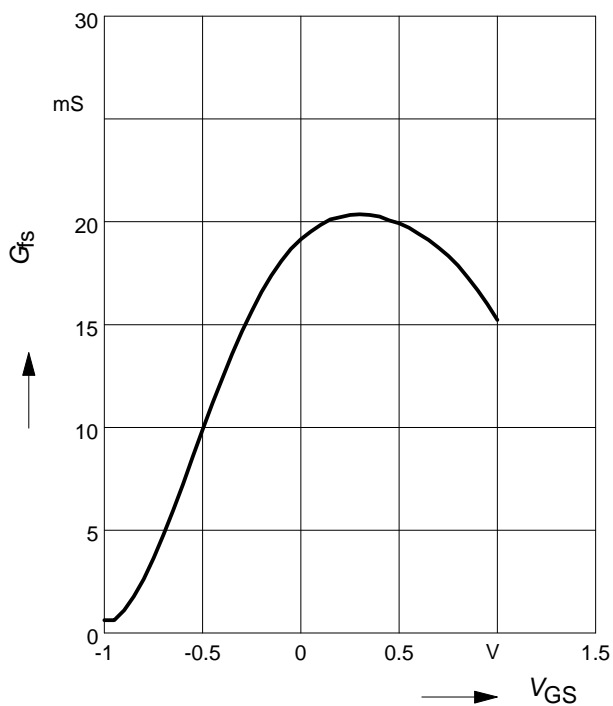
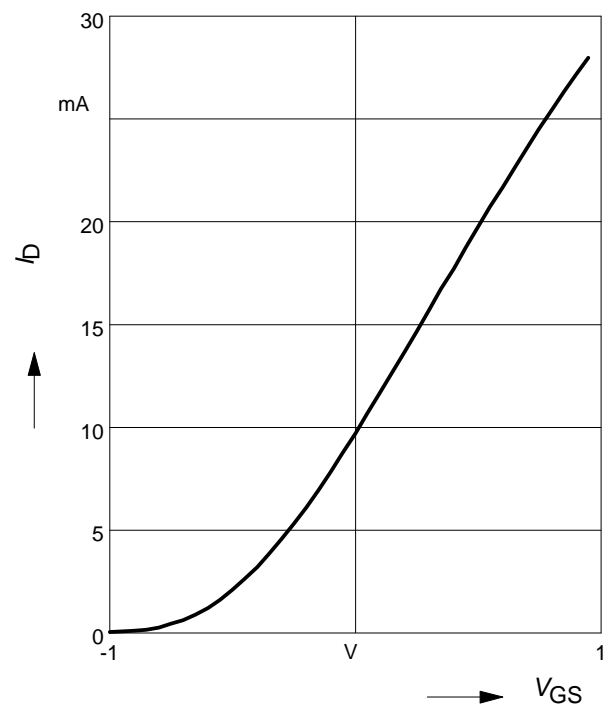
<sup>2)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Drain-source breakdown voltage $I_D = 10\ \mu\text{A}$ , $-V_{GS} = 4\ \text{V}$	$V_{(BR)DS}$	20	-	-	V
Gate-source breakdown voltage $\pm I_{GS} = 10\ \text{mA}$ , $V_{DS} = 0$	$\pm V_{(BR)GSS}$	6.5	-	12	
Gate-source leakage current $\pm V_{GS} = 5\ \text{V}$ , $V_{DS} = 0$	$\pm I_{GSS}$	-	-	50	nA
Drain current $V_{DS} = 10\ \text{V}$ , $V_{GS} = 0$	$I_{DSS}$	5	10	16	mA
Gate-source pinch-off voltage $V_{DS} = 10\ \text{V}$ , $I_D = 20\ \mu\text{A}$	$-V_{GS(p)}$	-	0.8	1.5	V

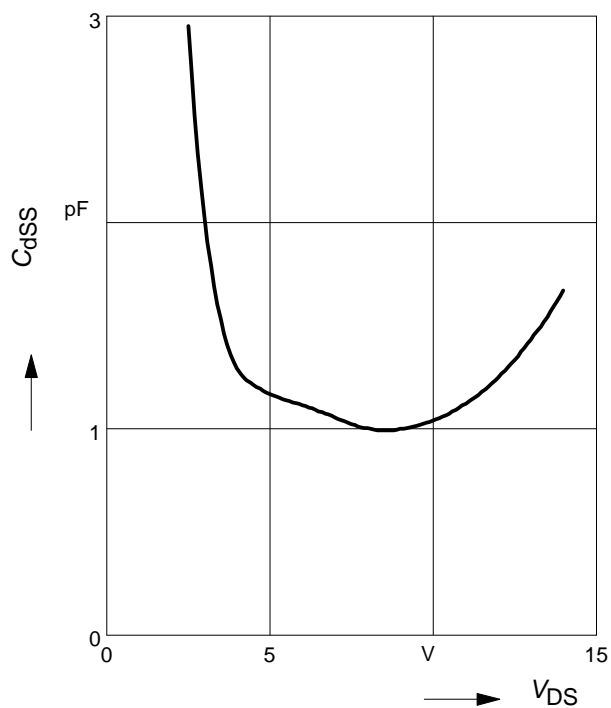
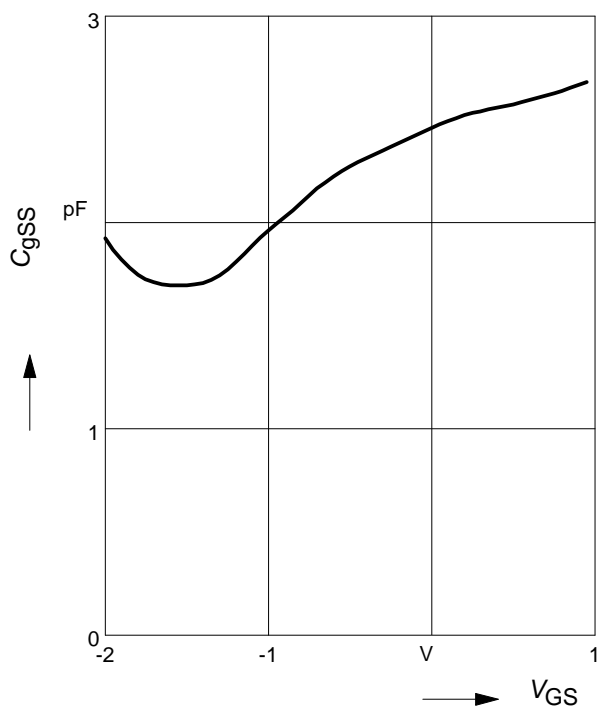
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

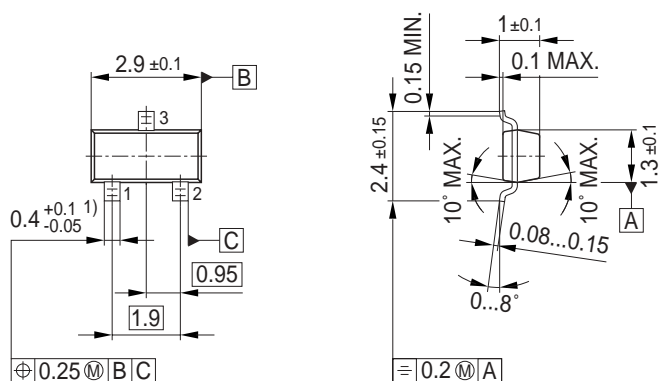
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Forward transconductance $V_{DS} = 10\text{ V}$ , $I_D = 10\text{ mA}$	$g_{fs}$	14	20	-	mS
Gate input capacitance $V_{DS} = 10\text{ V}$ , $I_D = 10\text{ mA}$ , $f = 10\text{ MHz}$	$C_{gss}$	-	2.5	-	pF
Output capacitance $V_{DS} = 10\text{ V}$ , $I_D = 10\text{ mA}$ , $f = 10\text{ MHz}$	$C_{dss}$	-	0.9	-	pF
Power gain $V_{DS} = 10\text{ V}$ , $I_D = 10\text{ mA}$ , $f = 45\text{ MHz}$	$G_p$	-	27	-	dB
Noise figure $V_{DS} = 10\text{ V}$ , $I_D = 10\text{ mA}$ , $f = 45\text{ MHz}$	$F$	-	2.1	-	dB

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

**Output characteristics  $I_D = f(V_{\text{DS}})$** 

**Gate transconductance  $g_{\text{fs}} = f(V_{\text{GS}})$** 

**Drain current  $I_D = f(V_{\text{GS}})$** 


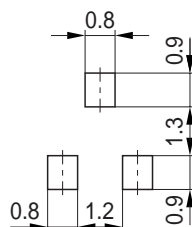
**Gate input capacitance**  $C_{gss} = f(V_{GS})$

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



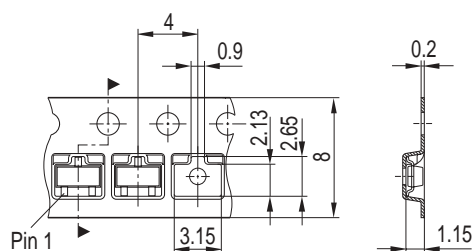


## Foot Print



The diagram shows a rectangular LED display package with four pins. The top pin is labeled 'Pin 1'. The package is labeled 'Infineon' (Manufacturer), '2005, June' (Date code (YM)), and 'BCW66' (Type code). The display itself shows the characters 'EHS' followed by the date code '05 06'.

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



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