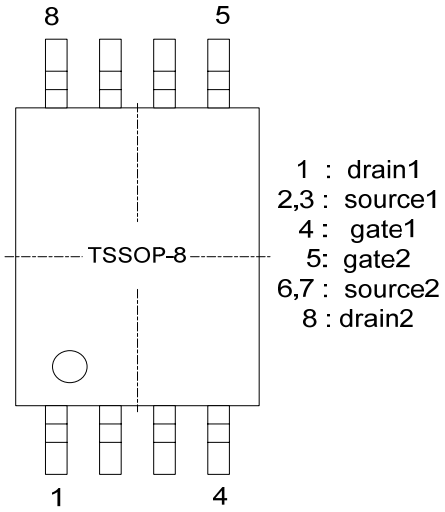
BYD Microelectronics Co., Ltd.

BF8205T

Dual N-Channel MOSFET

General Description

The BF8205T is a dual N-channel MOS Field Effect Transistor, Which is applied to electronic systems as a power switch.

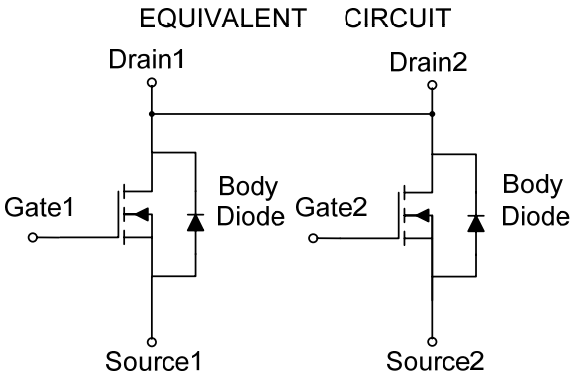


Features

- V_{DS} (V) =20V
- Low on-state resistance
  $R_{DS(on)}$ ≤ 22.0mΩ TYP(V_{GS} = 4.5V, I_D = 3.0A)
  $R_{DS(on)}$ ≤ 32.0mΩ TYP(V_{GS} = 2.5V, I_D = 3.0A)

Absolute Maximum Ratings (Tc = 25℃)

Symbol	Parameter	Value	Unit
V_{DSS}	Drain to Source Voltage	20	V
V_{GSS}	Gate to Source Voltage	±12	V
$I_{D(DC)}$	Drain Current (DC)	5	A
$I_{D(pulse)}$	Drain Current (pulse)[a]	20	A
P_T	Total Power Dissipation[b]	2	W
T_{ch}	Channel Temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃



Note a. PW<10us, Duty Cycle<1%, VGS=4.5V.
b. Mounted on ceramic substrate of 45 cm^2x 2.2mm.
Caution: These values must not be exceeded under any conditions.

Ordering Information

Part Number	Package	Packaging
BF8205T	TSSOP8	Tape & Reel

Electrical Characteristics (T_C = 25℃)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=18V,V_{GS}=0V			1	μA
I_{GSS}	Gate Leakage Current	V_{GS}=±12V,V_{DS}=0V			±10	μA
V_{GS}(th)	Gate threshold voltage	V_{DS}=V_{GS},I_D= 0.25mA	0.5	0.8	1.5	V
$\|y_{fs}\|$	Forward Transfer Admittance	V_{DS}=10V,I_D=3A		4		S
$R_{DS(on)}$	Drain to Source On-state Resistance	V_{GS}=4.5V,I_D=3A		19	22	mΩ
		V_{GS}=2.5V,I_D=3A		28	32	mΩ
C_{iss}	Input Capacitance	V_{DS}=10V, V_{GS}=0V, f=1MHz		572		pF
C_{oss}	Output Capacitance			84.8		pF
C_{rss}	Reverse Transfer Capacitance			8		pF
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=10V, I_D=3A, V_{GS}=4.5V, R_G=4.7Ω		49.7		ns
t_r	Rise Time			67		ns
$t_{d(off)}$	Turn-off Delay Time			27.6		ns
t_f	Fall Time			5.7		ns
Q_G	Total Gate Charge	V_{DD}=16V, V_{GS}=4.5V, I_D=6A		7.7		nC
Q_{GS}	Gate to Source Charge			2.5		nC
Q_{GD}	Gate to Drain Charge			1.5		nC
$V_{F(S-D)}$	Body Diode Forward Voltage	I_F=6A,V_{GS}=0V		0.7		V

Typical characteristics (25℃ unless noted)

Figure 1 Threshold Voltage vs. Temperature

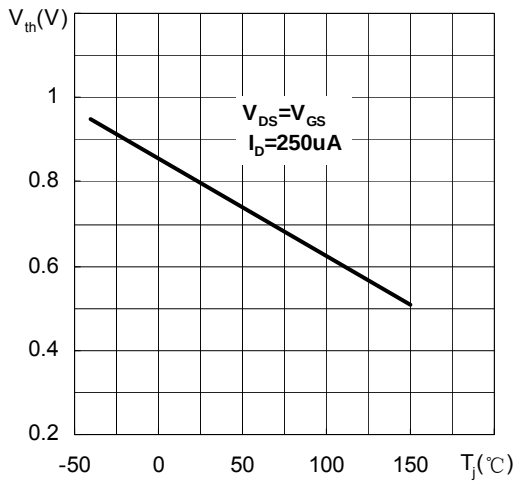


Figure 2 V_{DSS} vs.Temperature

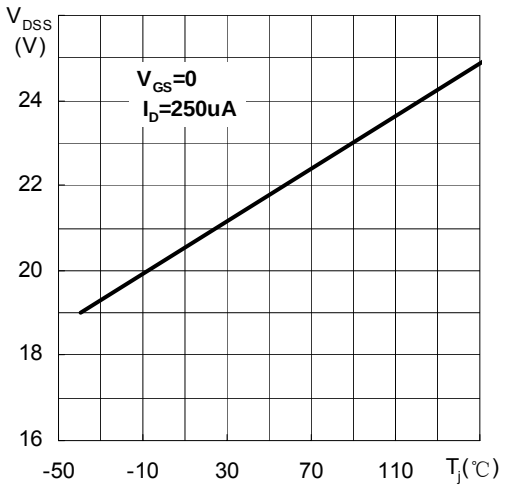


Figure 3 V_{GSS}+ vs. Temperature

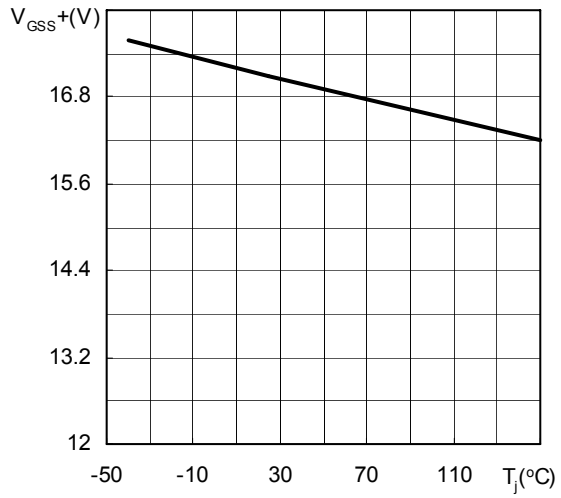


Figure 4 V_{GSS}- vs. Temperature

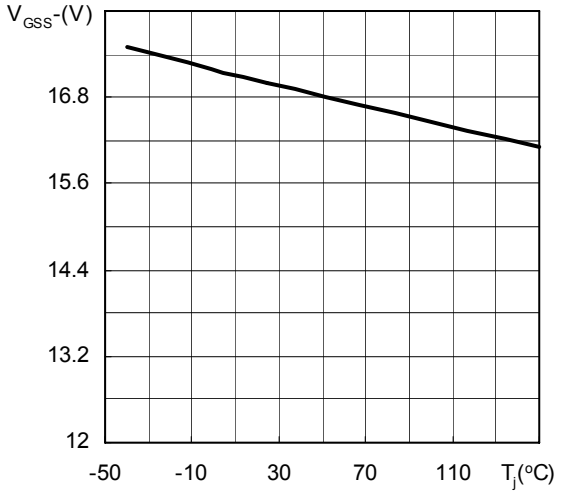


Figure 5 I_{DSS} vs. Temperature

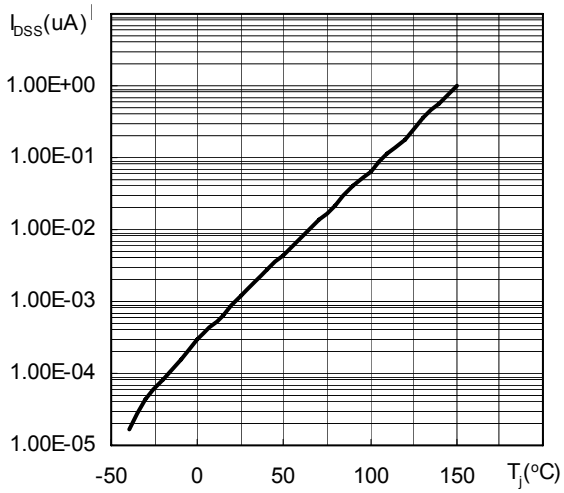


Figure 6 I_{GSS} vs. Temperature

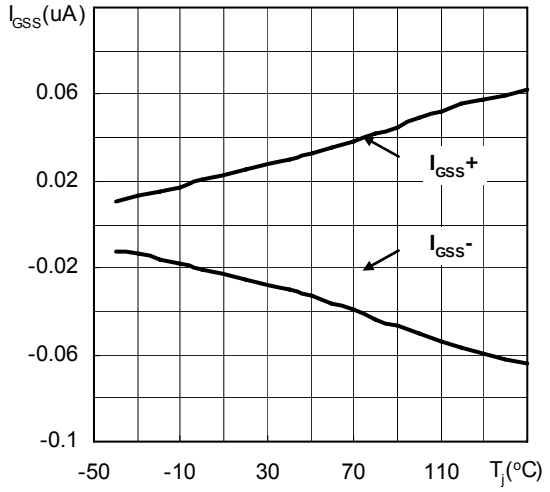


Figure 7 Normalized on Resistance vs Temperature

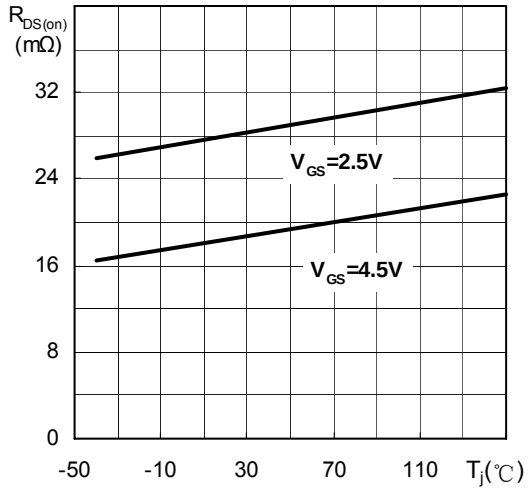


Figure 8 On Resistance vs. Drain Current

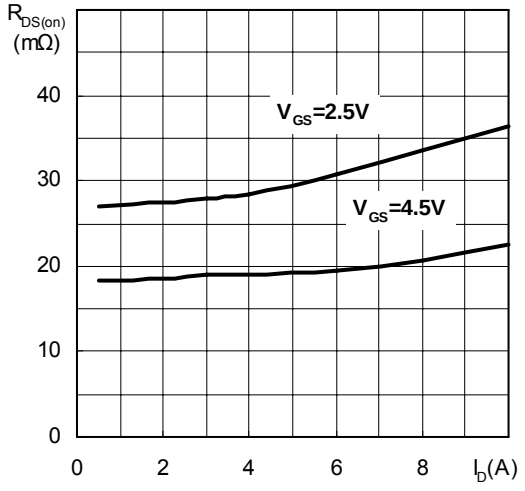


Figure 9 On-Resistance vs. Gate-to-Source Voltage

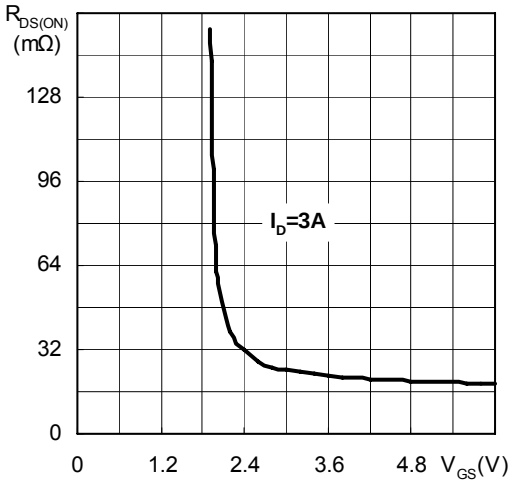


Figure 10 Drain to Source Voltage vs. Drain Current

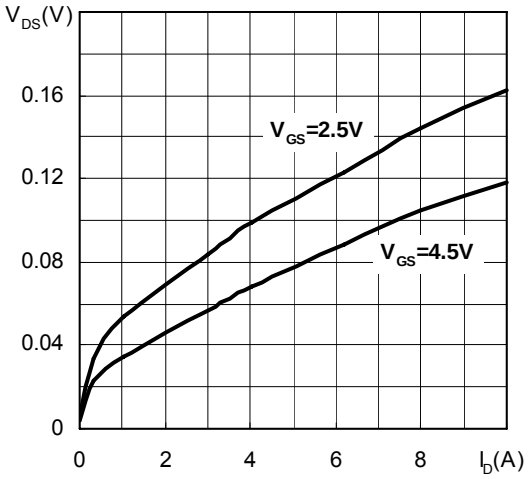


Figure 11 Gate Charge

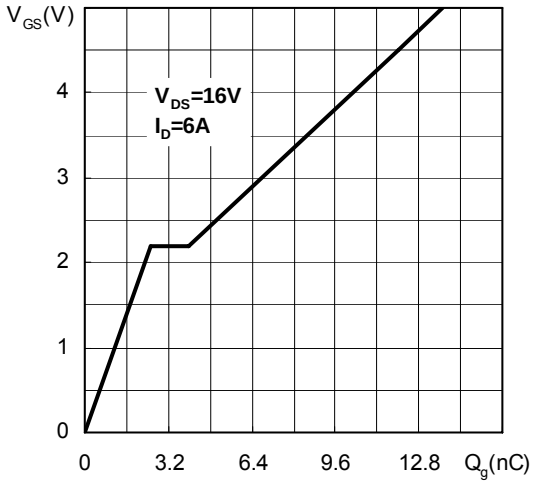
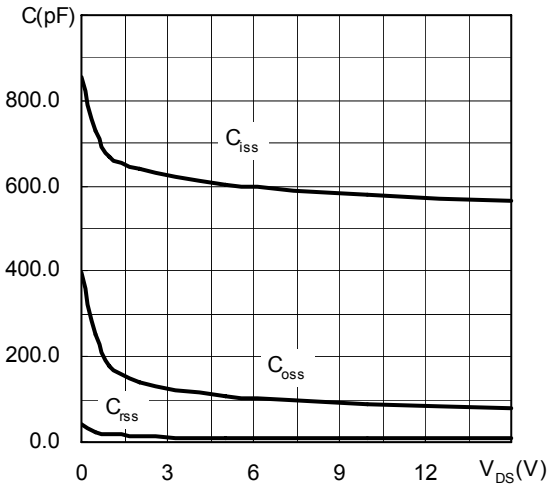
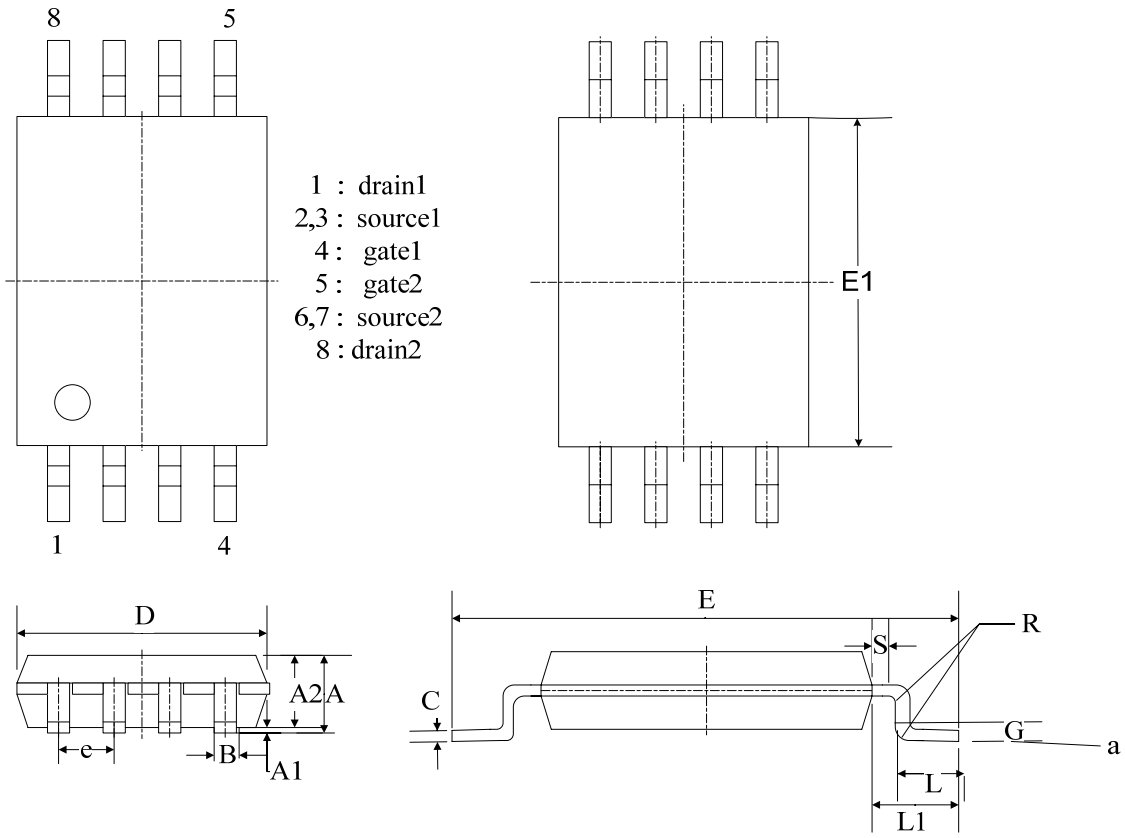


Figure 12 Capacitance



Package Drawing



Dimensions

DIM		A	A(1)	A(2)	B	C	D	E	E1	e	G	L	L1	a	R	S
MM	Min.	1.05	0.05	0.99	0.19		2.9	6.2	4.3	0.65 BSC	0.254 GAGE PLANE	0.45	0.9	0°	0.09	0.2
	Nom.	1.1	0.1	1.02	0.25	0.127	3	6.4	4.4			0.6	1	4°		
	Max.	1.2	0.15	1.05	0.3		3.2	6.6	4.5			0.75	1.1	8°		

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