

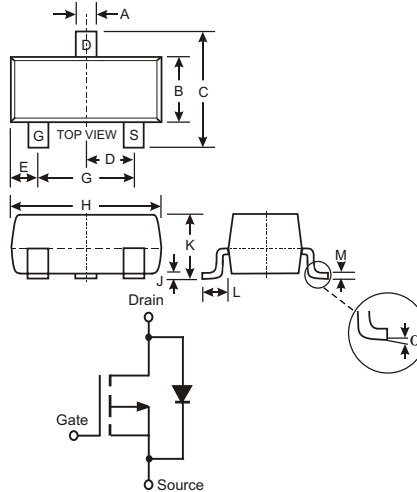
P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

Features

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage

Mechanical Data

- Case: SOT-23, Molded Plastic
- Case material - UL Flammability Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking (See Page 2): K84
- Ordering & Date Code Information: See Page 2
- Weight: 0.008 grams (approx.)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
α	0°	8°
All Dimensions in mm		

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	BSS84	Units
Drain-Source Voltage	V_{DSS}	-50	V
Drain-Gate Voltage $R_{GS} \leq 20K\Omega$	V_{DGR}	-50	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current (Note 1)	I_D	-130	mA
Total Power Dissipation (Note 1)	P_d	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)						
Drain-Source Breakdown Voltage	BV_{DSS}	-50	—	—	V	$V_{GS} = 0V, I_D = -250\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-15	μA	$V_{DS} = -50V, V_{GS} = 0V, T_J = 25^\circ\text{C}$
		—	—	-60	μA	$V_{DS} = -50V, V_{GS} = 0V, T_J = 125^\circ\text{C}$
		—	—	-100	nA	$V_{DS} = -25V, V_{GS} = 0V, T_J = 25^\circ\text{C}$
Gate-Body Leakage	I_{GSS}	—	—	± 10	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	$V_{GS(th)}$	-0.8	—	-2.0	V	$V_{DS} = V_{GS}, I_D = -1\text{mA}$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	—	10	Ω	$V_{GS} = -5V, I_D = 0.100\text{A}$
Forward Transconductance	g_{FS}	.05	—	—	S	$V_{DS} = -25V, I_D = 0.1\text{A}$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	—	45	pF	$V_{DS} = -25V, V_{GS} = 0V$ $f = 1.0\text{MHz}$
Output Capacitance	C_{oss}	—	—	25	pF	
Reverse Transfer Capacitance	C_{rss}	—	—	12	pF	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	—	10	—	ns	$V_{DD} = -30V, I_D = -0.27\text{A},$ $R_{GEN} = 50\Omega, V_{GS} = -10V$
Turn-Off Delay Time	$t_{D(OFF)}$	—	18	—	ns	

Note: 1. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

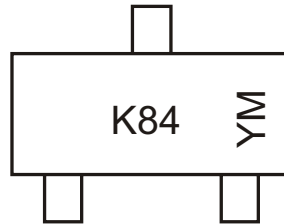
2. Short duration test pulse used to minimize self-heating effect.

Ordering Information (Note 3)

Device	Packaging	Shipping
BSS84-7	SOT-23	3000/Tape & Reel

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



K84 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: N = 2002
 M = Month ex: 9 = September

Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	J	K	L	M	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D