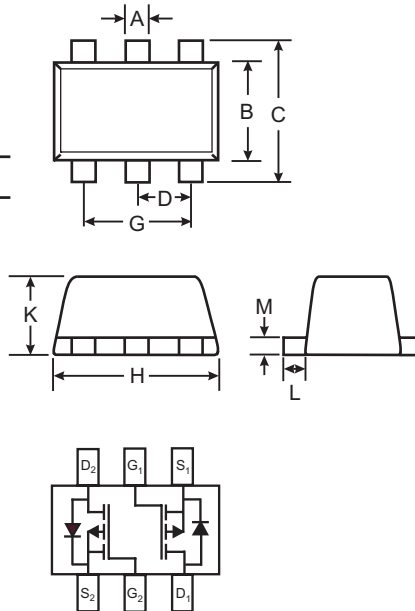


Features

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- **Lead Free By Design/RoHS Compliant (Note 3)**
- **"Green" Device (Note 4)**

Mechanical Data

- Case: SOT-563
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking Code (See Page 2): K84
- Ordering & Date Code Information: See Page 2
- Weight: 0.006 grams (approx.)



SOT-563			
Dim	Min	Max	Typ
A	0.15	0.30	0.25
B	1.10	1.25	1.20
C	1.55	1.70	1.60
D	0.50		
G	0.90	1.10	1.00
H	1.50	1.70	1.60
K	0.56	0.60	0.60
L	0.10	0.30	0.20
M	0.10	0.18	—
All Dimensions in mm			

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V _{DSS}	-50	V
Drain-Gate Voltage (Note 1)	V _{DGR}	-50	V
Gate-Source Voltage	V _{GSS}	±20	V
Drain Current (Note 2)	I _D	-130	mA
Total Power Dissipation (Note 2)	P _d	150	mW
Thermal Resistance, Junction to Ambient (Note 2)	R _{θJA}	833	°C/W
Operating and Storage Temperature Range	T _j , T _{STG}	-55 to +150	°C

- Note: 1. R_{GS} ≤ 20kΩ.
 2. 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>.
 3. No purposefully added lead.
 4. Diodes Inc's "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

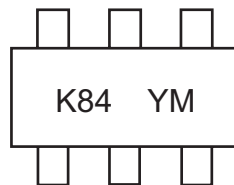
Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)						
Drain-Source Breakdown Voltage	BV _{DSS}	-50	-75	—	V	V _{GS} = 0V, I _D = -250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	-15 -60 -100	μA μA nA	V _{DS} = -50V, V _{GS} = 0V, T _J = 25°C V _{DS} = -50V, V _{GS} = 0V, T _J = 125°C V _{DS} = -25V, V _{GS} = 0V, T _J = 25°C
Gate-Body Leakage	I _{GSS}	—	—	±50	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	V _{GS(th)}	-0.8	-1.6	-2.0	V	V _{DS} = V _{GS} , I _D = -1mA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	2	10	Ω	V _{GS} = -5V, I _D = -0.100A
Forward Transconductance	g _{FS}	0.05	—	—	S	V _{DS} = -25V, I _D = -0.1A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	—	—	45	pF	V _{DS} = -25V, V _{GS} = 0V f = 1.0MHz
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 = -0.27A, R _{GEN} = 50Ω, V _{GS} = -10V
Turn-Off Delay Time	t _{D(OFF)}	—	18	—	ns	

Ordering Information (Note 6)

Device	Packaging	Shipping
BSS84V-7	SOT-563	3000/Tape & Reel

- Notes: 5. Short duration test pulse used to minimize self-heating effect.
6. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information (Note 7)


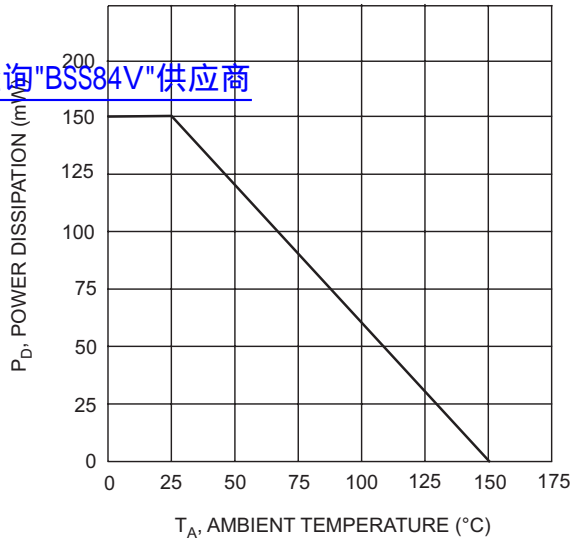
K84 = Product Type Marking Code
YM = Date Code Marking
Y = Year ex: S = 2005
M = Month ex: 9 = September

- Notes: 7. Package is non-polarized. Parts may be on reel in orientation illustrated, 180° rotated, or mixed (both ways).

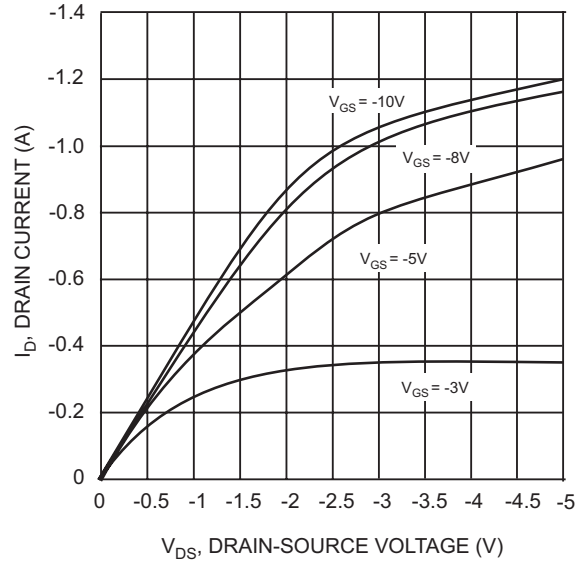
Date Code Key

Year										2005	2006	2007	2008	2009
Code										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		

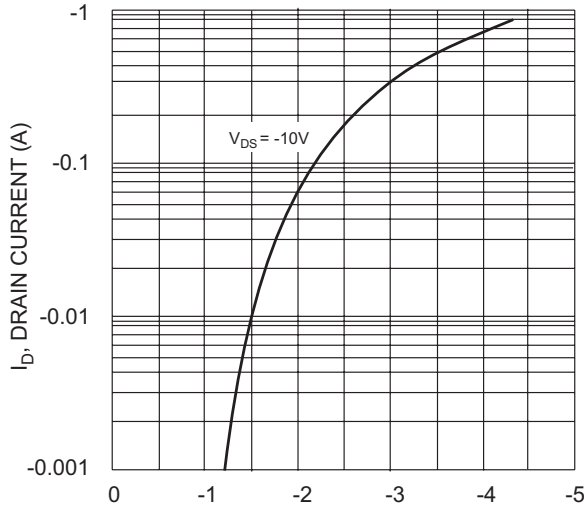
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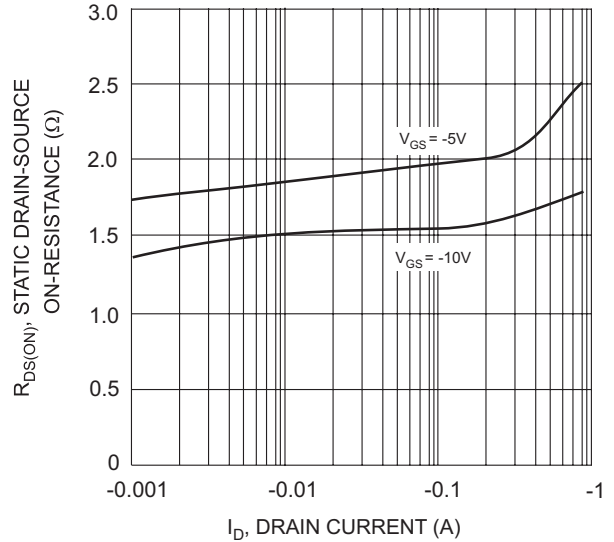
T_A , AMBIENT TEMPERATURE (°C)
Fig. 1, Max Power Dissipation vs Ambient Temperature



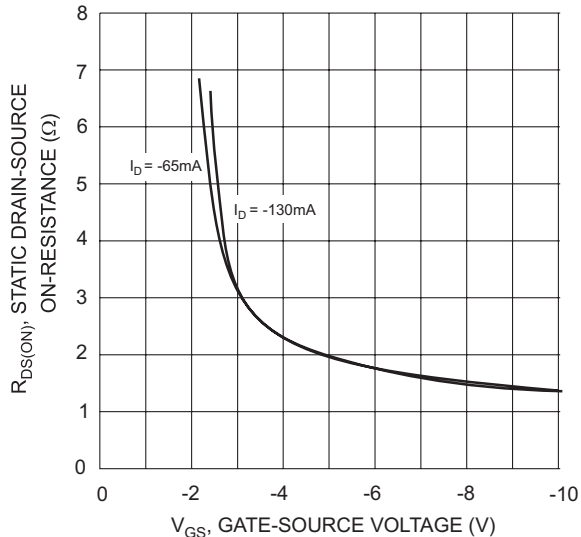
V_{DS} , DRAIN-SOURCE VOLTAGE (V)
Fig. 2, Typical Output Characteristics



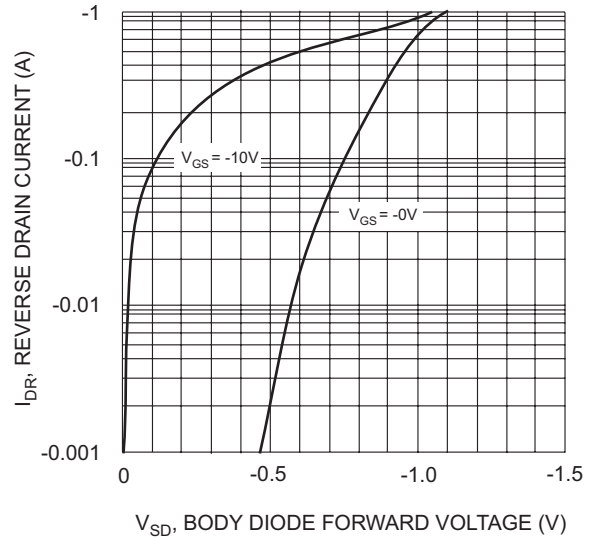
V_{GS} , GATE-SOURCE VOLTAGE (V)
Fig. 3, Typical Transfer Characteristics



$R_{DS(on)}$, STATIC DRAIN-SOURCE ON-RESISTANCE (Ω)
 I_D , DRAIN CURRENT (A)
Fig. 4, Static Drain-Source On-Resistance vs. Drain Current



$R_{DS(on)}$, STATIC DRAIN-SOURCE ON-RESISTANCE (Ω)
 V_{GS} , GATE-SOURCE VOLTAGE (V)
Fig. 5, Static Drain-Source On-Resistance vs. Gate-Source Voltage



I_{DR} , REVERSE DRAIN CURRENT (A)
 V_{SD} , BODY DIODE FORWARD VOLTAGE (V)
Fig. 6, Reverse Drain Current vs. Body Diode Forward Voltage

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