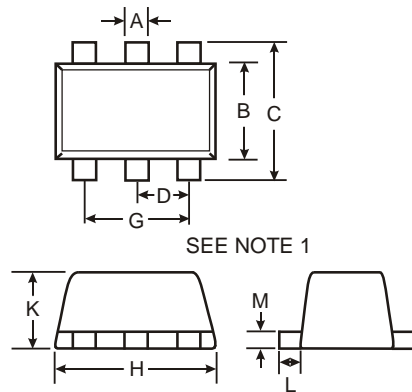


Features

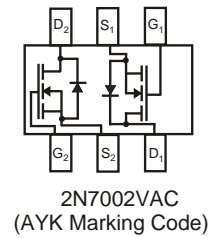
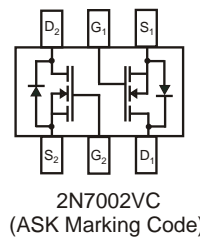
- Dual N-Channel MOSFET
- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package
- **Lead Free By Design/RoHS Compliant (Note 3)**
- **"Green Device" (Note 4)**

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
- Terminal Connections: See Diagram (Note 1)
- Terminals: Finish - Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking: See Page 2
- Ordering & Date Code Information: See Page 2
- Weight: 0.003 grams (approximate)



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 @ TA = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage $R_{GS} = 1.0M$	V_{DGR}	60	V
Gate-Source Voltage (Note 2)	V_{GSS}	± 20 ± 40	V
Drain Current (Note 2)	I_D	280	mA
Drain Current (Note 2)	I_{DM}	1.5	A
Total Power Dissipation	P_d	150	mW
Thermal Resistance, Junction to Ambient	R_{JA}	833	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C

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

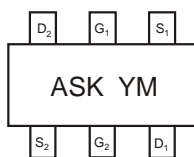
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)						
Drain-Source Breakdown Voltage	BV _{DSS}	60	70		V	V _{GS} = 0V, I _D = 10μA
Zero Gate Voltage Drain Current	I _{DSS}			1.0 500	μA	@ T _C = 25°C @ T _C = 125°C V _{DS} = 60V, V _{GS} = 0V
Gate-Body Leakage	I _{GSS}			±100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	V _{GS(th)}	1.0		2.5	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(on)}			7.5 13.5		V _{GS} = 5V, I _D = 0.05A, V _{GS} = 10V, I _D = 0.5A, T _j = 125°C
On-State Drain Current	I _{D(on)}	0.5	1.0		A	V _{GS} = 10V, V _{DS} = 7.5V
Forward Transconductance	g _{FS}	80			mS	V _{DS} = 10V, I _D = 0.2A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}			50	pF	V _{DS} = 25V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}			25	pF	
Reverse Transfer Capacitance	C _{rss}			5.0	pF	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	t _{D(on)}			20	ns	V _{DD} = 30V, I _D = 0.2A, R _L = 150 Ω, V _{GEN} = 10V, R _{GEN} = 25 Ω
Turn-Off Delay Time	t _{D(off)}			20	ns	

Ordering Information (Note 6)

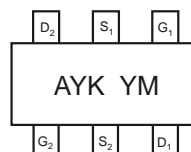
Device	Packaging	Shipping
2N7002VC-7	SOT-563	3000/Tape & Reel
2N7002VAC-7	SOT-563	3000/Tape & Reel

- 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



ASK = 2N7002VC Product Type Marking Code (See Note 1)
YM = Date Code Marking
Y = Year ex: R = 2004
M = Month ex: 9 = September



AYK = 2N7002VAC Product Type Marking Code (See Note 1)
YM = Date Code Marking
Y = Year ex: R = 2004
M = Month ex: 9 = September

Date Code Key

Year	2004	2005	2006	2007	2008	2009
Code	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

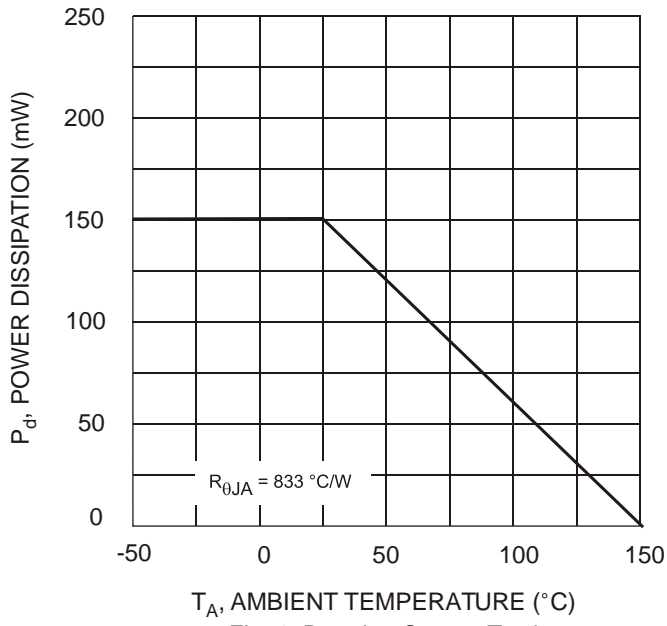


Fig. 1, Derating Curve - Total