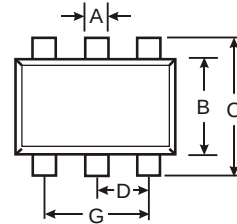


Features

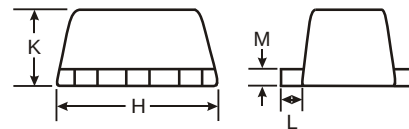
- Σ Dual N-Channel MOSFET
- Σ Low On-Resistance
- Σ Low Gate Threshold Voltage
- Σ Low Input Capacitance
- Σ Fast Switching Speed
- Σ Low Input/Output Leakage
- Σ Ultra-Small Surface Mount Package
- Σ **Lead Free By Design/RoHS Compliant (Note 3)**
- Σ **"Green Device" (Note 4)**

Mechanical Data

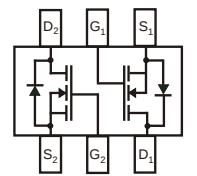
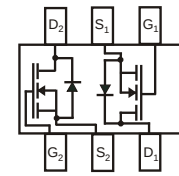
- Σ Case: SOT-563
- Σ Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Σ Moisture Sensitivity: Level 1 per J-STD-020C
- Σ Terminal Connections: See Diagram (Note 1)
- Σ Terminals: Finish - Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Σ Marking: See Page 2
- Σ Ordering & Date Code Information: See Page 2
- Σ Weight: 0.003 grams (approximate)



SEE NOTE 1



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	æ
All Dimensions in mm			


 2N7002VC
(ASK Marking Code)

 2N7002VAC
(AYK Marking Code)

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V _{DSS}	60	V
Drain-Gate Voltage R _{GS} ≤ 1.0MW	V _{DGR}	60	V
Gate-Source Voltage (Note 2)	V _{GSS}	±20	V
Continuous Pulsed		±40	
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 _{qJA}	833	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

- Notes:
- Package is non-polarized. Parts may be on reel in orientation illustrated, 180° rotated, or mixed (both ways).
 - 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>.
 - No purposefully added Lead.
 - Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.

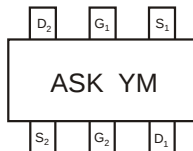
Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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 = 10mA
Zero Gate Voltage Drain Current @ T _C = 25°C @ T _C = 125°C	I _{DSS}	∞	∞	1.0 500	μA	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 = 250mA
Static Drain-Source On-Resistance	R _{DS (ON)}	∞ ∞	∞ ∞	7.5 13.5	W	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 = 150W, V _{GEN} = 10V, R _{GEN} = 25W
Turn-Off Delay Time	t _{D(OFF)}	∞	∞	20	ns	

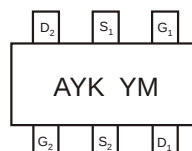
Ordering Information (Note 6)

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

