



**DESCRIPTION**

The AM07N65 is available in TO-220, TO-220F, TO-262-3, TO-263-2, TO-251 and TO-252 Packages.

VDSS	RDS(ON)	ID
650V	1.13Ω	7A

**FEATURE**

- Fast Switching.
- Low On Resistance
- Low Gate Charge

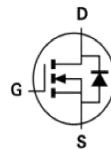
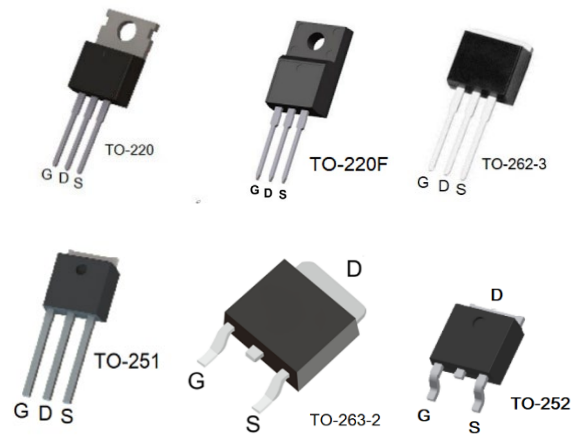
**PIN DESCRIPTION**

**MECHANICAL DATA**

- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0

**APPLICATION**

- Power Switch Circuit of Adaptor and Charger.



**ORDERING INFORMATION**

Package Type	Part Number	
TO-220 SPQ: 50pcs /Tube	T3	AM07N65T3U
		AM07N65T3VU
TO-220F SPQ: 50pcs /Tube	T3F	AM07N65T3FU
		AM07N65T3FVU
TO-262-3 SPQ: 50pcs/Tube	TS3	AM07N65TS3U
		AM07N65TS3VU
TO-263-3 SPQ: 800pcs/Reel	S3	AM07N65S3R
		AM07N65S3VR
TO-251 SPQ: 80pcs /Tube	TD3	AM07N65DTD3U
		AM07N65TD3VU
TO-252 SPQ: 2,500pcs/Reel	D	AM07N65DR
		AM07N65DVR
Note	R: Tape & Reel U: Tube V: Halogen free Package	
AiT provides all RoHS products		

Pin #	G	D	S
Package	Gate	Drain	Source
TO-220	1	2	3
TO-220F	1	2	3
TO-262-3	1	2	3
TO-251	1	2	3
TO-263-2	1	2,4	3
TO-252	1	2,4	3

**ABSOLUTE MAXIMUM RATINGS**T<sub>C</sub>=25°C, unless otherwise Noted

V <sub>DS</sub> , Drain-Source Voltage		650V
V <sub>GS</sub> , Gate-Source Voltage		±30V
I <sub>D</sub> , Continue Drain Current		7A
I <sub>DM</sub> , Pulsed Drain Current <sup>(1)</sup>		28A
E <sub>AS</sub> , Avalanche Energy <sup>(1)</sup>		350mJ
P <sub>D</sub> , Power Dissipation	TO-220, TO-262-3, TO-263-2	100W
	TO-220F	35W
	TO-251, TO-252	100W
T <sub>J</sub> , Operating Temperature Range		150°C
T <sub>STG</sub> , Storage Temperature Range		-55°C~+150°C
R <sub>θJC</sub> , Thermal Resistance, Junction-Case	TO-220, TO-262-3, TO-263-2	1.25°C/W
	TO-220F	3.57°C/W
	TO-251, TO-252	1.25°C/W
R <sub>θJA</sub> , Thermal Resistance, Junction-Ambient	TO-220, TO-262-3, TO-263-2	62.5°C/W
	TO-220F	62.5°C/W
	TO-251, TO-252	100°C/W

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

(1) Pulse test: 300 μs pulse width, 2 % duty cycle

**ELECTRICAL CHARACTERISTICS**T<sub>C</sub> = 25°C, unless otherwise specified

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	650	-	-	V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> = 650V, V <sub>GS</sub> = 0V	-	-	1	μA
Gate Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±30, V <sub>DS</sub> = 0V	-	-	±100	nA
Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 3.5A	-	1.13	1.35	Ω
Gate-Source Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250uA	2	-	4	V
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> = 15V, I <sub>D</sub> = 3.5uA	-	6.5	-	S
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 2V, V <sub>GS</sub> = 0V, f = 200KHz	-	1130	-	pF
Output Capacitance	C <sub>oss</sub>		-	92	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	5.3	-	
Total Gate Charge <sup>(1)</sup>	Q <sub>g</sub>	I <sub>D</sub> = 7A, V <sub>DD</sub> = 520V, V <sub>GS</sub> = 10V	-	23	-	nC
Gate to Source charge <sup>(1)</sup>	Q <sub>gS</sub>		-	5	-	
Gate to Drain charge <sup>(1)</sup>	Q <sub>gd</sub>		-	9	-	
Turn-On Delay Time <sup>(1)</sup>	t <sub>d(on)</sub>	I <sub>D</sub> = 7A, V <sub>DD</sub> = 325V, R <sub>G</sub> = 10Ω	-	18	-	ns
Rise Time <sup>(1)</sup>	t <sub>r</sub>		-	19	-	
Turn-Off Delay Time <sup>(1)</sup>	t <sub>d(off)</sub>		-	39	-	
Fall Time <sup>(1)</sup>	t <sub>f</sub>		-	18	-	
Continuous Source Current	I <sub>S</sub>	T <sub>J</sub> = 25°C	-	-	7	A
Maximum Pulsed Current	I <sub>SM</sub>		-	-	28	
Diode-Source Diode Forward Voltage	V <sub>SD</sub>	I <sub>SD</sub> = 7A	-	-	1.4	V
Reverse Recovery Time <sup>(1)</sup>	T <sub>rr</sub>	I <sub>SD</sub> = 7A, V <sub>GS</sub> = 0V,	-	420	-	ns
Reverse Recovery Charge <sup>(1)</sup>	Q <sub>rr</sub>	dI <sub>F</sub> / dt = 100 A/us	-	1.9	-	nC

(1) Pulse test: 300 μs pulse width, 2 % duty cycle



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Maximum Safe Operation Area

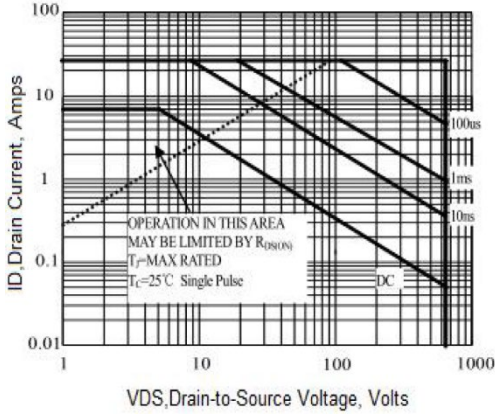


Fig 2. Drain Current vs. Case Temperature

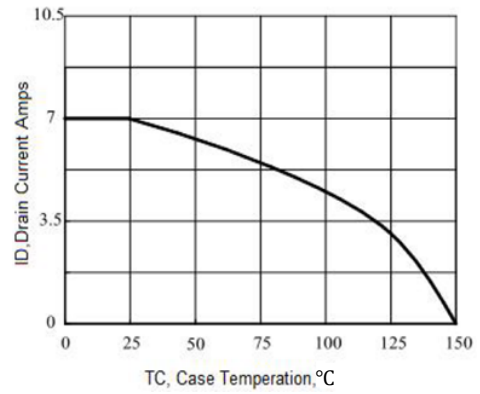


Fig 3. Output Characteristics

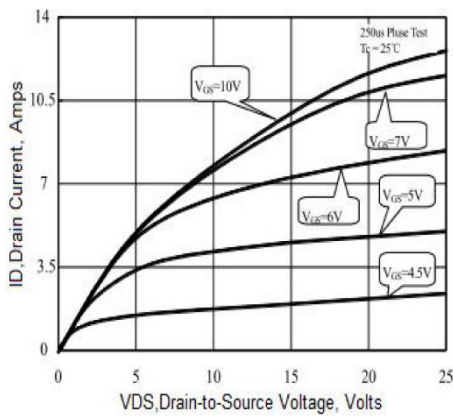


Fig 4. Drain-Source On Resistance vs. Drain Current

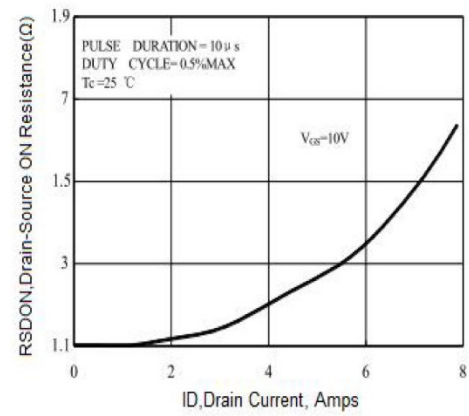


Fig 5. Capacitance Characteristics

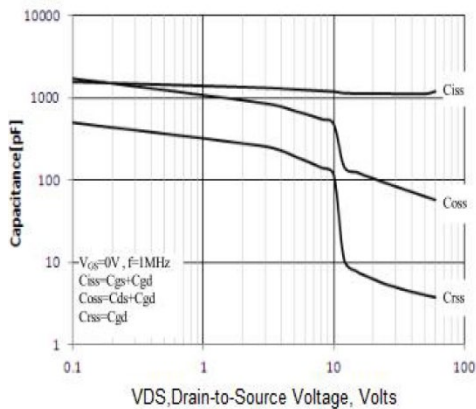
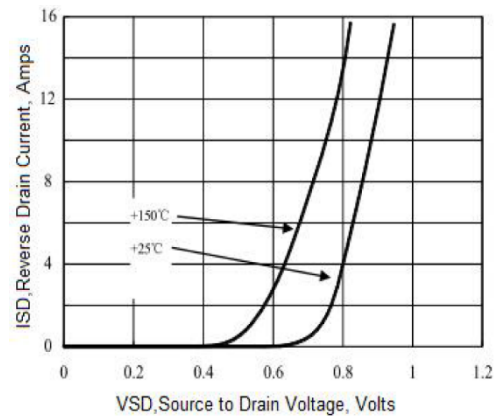


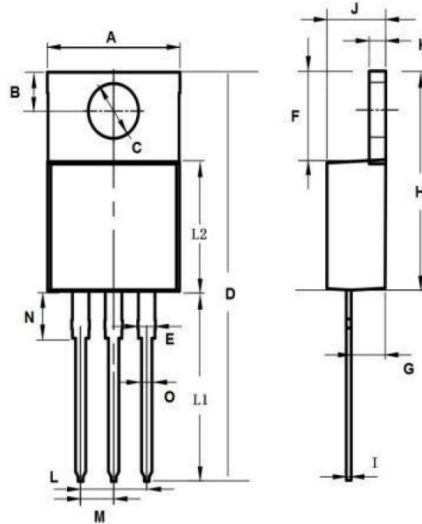
Fig 6. Reverse Drain Current





**PACKAGE INFORMATION**

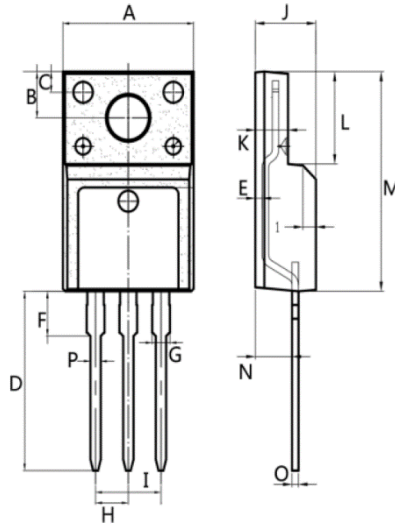
Dimension in TO-220 (Unit: mm)



Symbol	Millimeter	
	Min.	Max.
A	10.150	10.350
B	2.500	2.950
C	3.700	3.900
D	28.500	29.500
E	1.200	1.400
F	6.200	6.550
G	2.850	3.250
H	15.000	16.000
I	0.350	0.420
J	4.300	4.550
K	1.200	1.400
L	5.080 TYP.	
L1	13.000	14.000
L2	8.500	9.500
M	2.540 TYP.	
N	2.800	3.500
O	0.700	0.900



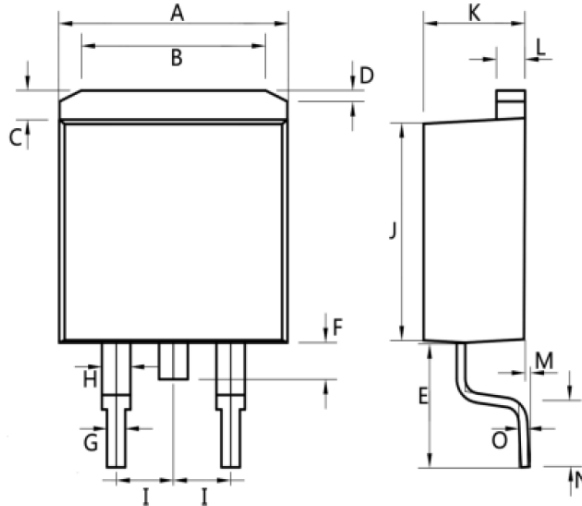
Dimension in TO-220F (Unit: mm)



Symbol	Millimeter	
	Min.	Max.
A	9.950	10.350
B	2.950	3.250
C	1.250	1.450
D	12.650	12.950
E	0.400	0.600
F	2.800	3.500
G	1.300	1.450
H	2.540 TYP.	
I	5.080 TYP.	
J	4.600	4.750
K	2.450	2.650
L	6.450	6.850
M	15.400	16.000
N	2.750	3.050
O	0.450	0.550
P	0.700	0.900



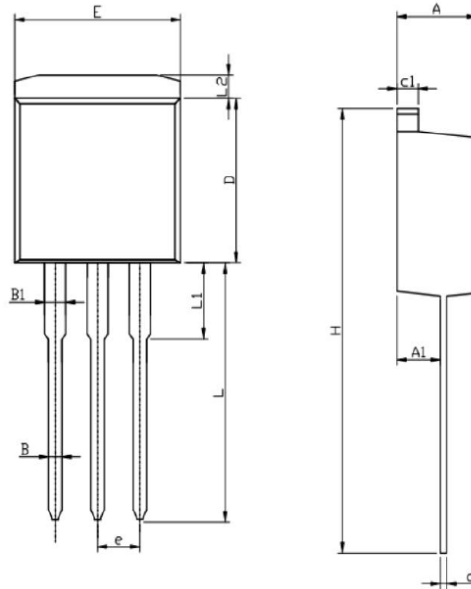
Dimension in TO-263-2 (Unit: mm)



Symbol	Millimeter	
	Min.	Max.
A	10.100	10.350
B	6.000	8.000
C	1.200	1.500
D	0.550	1.000
E	4.300	5.300
F	1.400	1.600
G	0.750	0.850
H	1.200	1.500
I	2.540 TYP.	
J	8.500	9.500
K	4.300	4.550
L	1.250	1.350
M	0.020	0.230
N	2.200	2.800
O	0.300	0.400



Dimension in TO-262-3(Unit: mm)

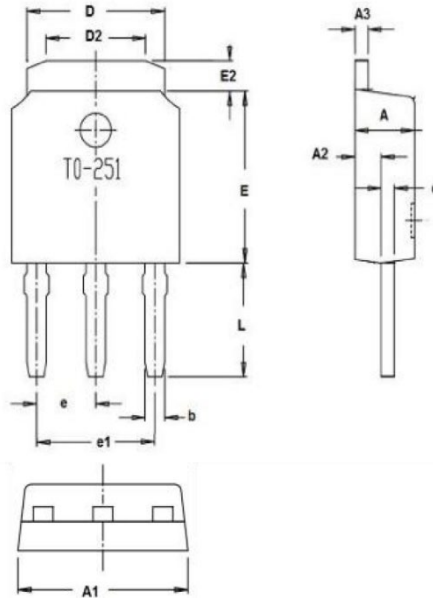


Symbol	Millimeter	
	Min.	Max.
A	4.400	4.600
A1	2.400	2.600
B	0.750	0.850
B1	1.200	1.400
C	0.350	0.420
C1	1.250	1.350
D	8.500	9.500
E	10.150	10.350
H	23.000	25.000
L	13.000	14.000
L1	2.800	3.500
L2	1.200	1.500





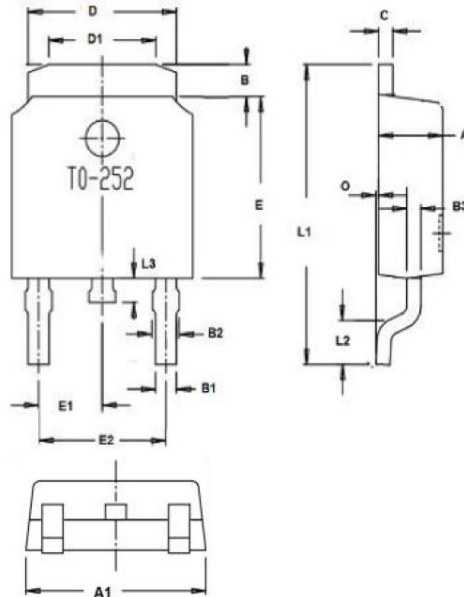
Dimension in TO-251 (Unit: mm)



Symbol	Millimeter	
	Min.	Max.
A	2.100	2.500
A1	6.300	6.900
A2	0.900	1.100
A3	0.500 TYP.	
b	0.600	0.800
c	0.400	0.500
D	5.300	5.500
D2	3.650	4.050
E	5.800	6.400
E2	0.900	1.400
e	2.290 TYP.	
e1	4.580 TYP.	
L	3.700	4.300



Dimension in TO-252 (Unit: mm)



Symbol	Millimeter	
	Min.	Max.
A	2.100	2.500
A1	6.300	6.900
B	0.950	1.550
B1	0.600	0.800
B2	0.750	0.950
C	0.500 TYP.	
D	5.300	5.500
D1	3.650	4.050
E	5.800	6.400
E1	2.300 TYP.	
E2	4.600 TYP.	
O	0.000	0.150
L1	10.000	11.000
L2	1.500 TYP.	
L3	0.700	1.000



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