



DESCRIPTION

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

VDSS	RDSON	ID
	V _{GS} =10V	
650V	1.13Ω	7A

FEATURE

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

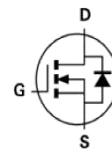
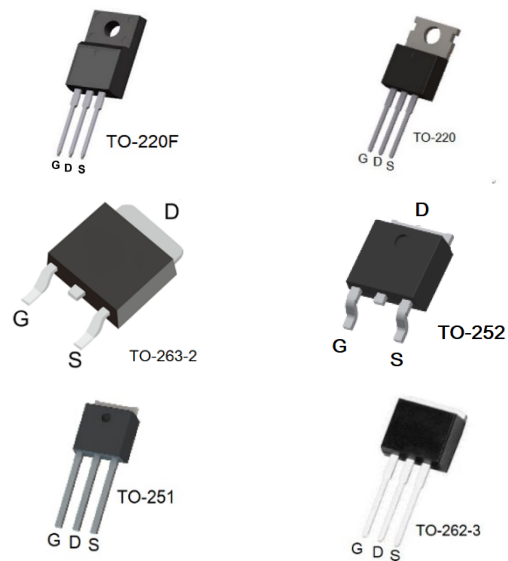
PIN DESCRIPTION

MECHANICAL DATA

- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum, 10s per JESD 22-B106

APPLICATION

- Power Switch Circuit of Adaptor and Charger.



ORDERING INFORMATION

Package Type	Part Number	
TO-220 SPQ: 50pcs /Tube	T3	AM07N65T3R
		AM07N65T3VR
TO-220F SPQ: 50pcs /Tube	T3F	AM07N65T3FU
		AM07N65T3FVU
TO-263-2 SPQ: 50pcs/Tube	S2	AM07N65S2R
		AM07N65S2VR
TO-263-3 SPQ: 800pcs/Reel	S3	AM07N65S3R
		AM07N65S3VR
TO-251 SPQ: 80pcs /Tube	TD3	AM07N65DTD3U
		AM07N65D3VU
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#	Symbol	Function
1	G	Gate
2	D	Source
3	S	Source
4	D	Source

**ABSOLUTE MAXIMUM RATINGS** $T_C=25^{\circ}\text{C}$, unless otherwise Noted

V_{DS} , Drain-Source Voltage		650V
V_{GS} , Gate-Source Voltage		$\pm 30\text{V}$
I_D , Continue Drain Current		7A
I_{DM}^* , Pulsed Drain Current		28A
E_{AS}^* , Avalanche Energy		350mJ
P_D , Power Dissipation	TO-220, TO-263-3, TO-263-2	100W
	TO-220F	35W
	TO-251, TO-252	100W
T_J , Operating Junction Temperature Range		150°C
T_{STG} , Storage Temperature Range		$-55^{\circ}\text{C} \sim +150^{\circ}\text{C}$
$R_{\theta JC}$, thermal resistance, Junction-Case	TO-220, TO-263-3, TO-263-2	1.25°C/W
	TO-220F	3.57°C/W
	TO-251, TO-252	1.25°C/W
$R_{\theta JA}$, thermal resistance, Junction-Ambient	TO-220, TO-263-3, 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.

* Pulse test: 300 μs pulse width, 2 % duty cycle



ELECTRICAL CHARACTERISTICS

T_C = 25°C, unless otherwise Noted

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	650	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 650V, V _{GS} =0V	-	-	1	μA
Gate-Source Forward Leakage	I _{GSS}	V _{GS} = ±30, V _{DS} =0V	-	-	±100	nA
Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =3.5A	-	1.13	1.35	mΩ
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2	-	4	V
Forward Transconductance	g _{fs}	V _{DS} =15V, I _D =3.5uA	-	6.50	-	Ω
Input Capacitance	C _{iss}	V _{DS} =2V, V _{GS} =0V, f=200KHz	-	1130	-	pF
Output Capacitance	C _{oss}		-	92	-	
Reverse Transfer Capacitance	C _{rss}		-	5.30	-	
Total Gate Charge	Q _g	V _{DD} = 520V, I _D =7A, V _{GS} = 10V	-	23	-	nC
Gate-Source charge	Q _{gS}		-	5	-	
Gate-Drain charge	Q _{gd}		-	9	-	
Turn-On Delay Time	t _{d(on)}	V _{DD} = 325V, I _D =7A, R _G =10Ω	-	18	-	ns
Rise Time	t _r		-	19	-	
Turn-Off Delay Time	t _{d(off)}		-	39	-	
Fall Time	t _f		-	18	-	
Continuous Source Current	I _S	T _j =25°C	-	-	7	A
Maximum Pulsed Current	I _{SM}		-	-	28	
Diode Forward Voltage	V _{SD}	I _{SD} =7A	-	-	1.40	V
Reverse Recovery Time	T _{rr}	I _{SD} =7A, V _{GS} = 0V,	-	420	-	ns
Reverse Recovery Charge	Q _{rr}	diF/dt=100A/us	-	1.90	-	nC
Pulse width tp≤300μs, δ≤2%						

* Pulse test: 300 μs pulse width, 2 % duty cycle



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Maximum Safe Operation Area

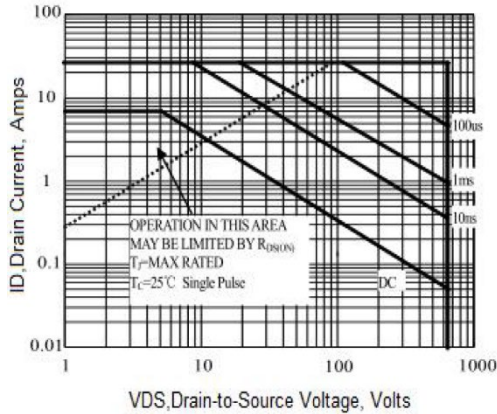


Fig 2. Drain Current vs. T_J

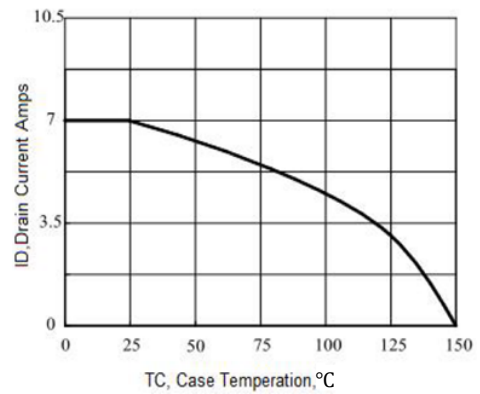


Fig 3. Output Characteristics

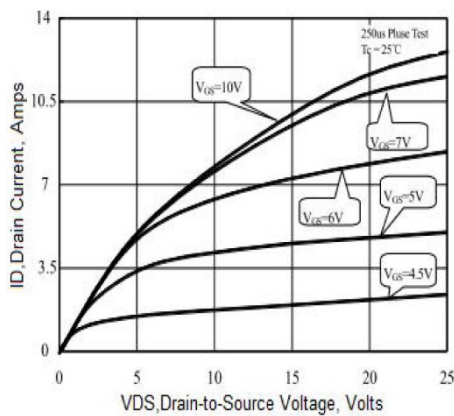


Fig 4. Drain-Source On Resistance

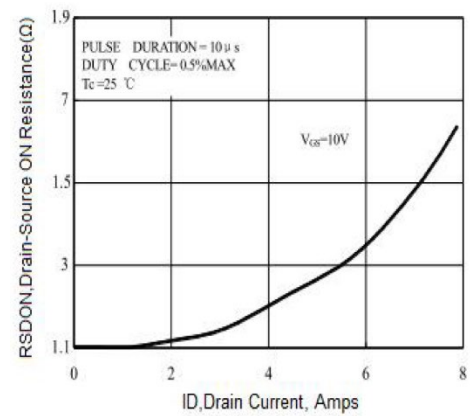


Fig 5. Capacitance

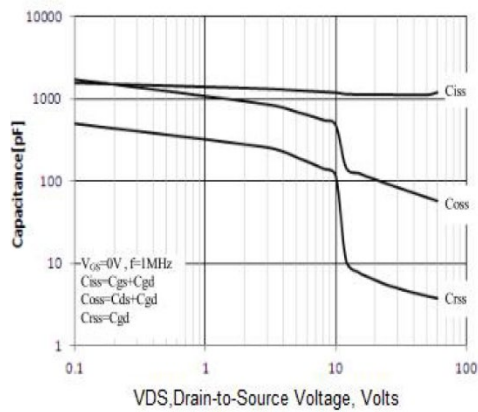
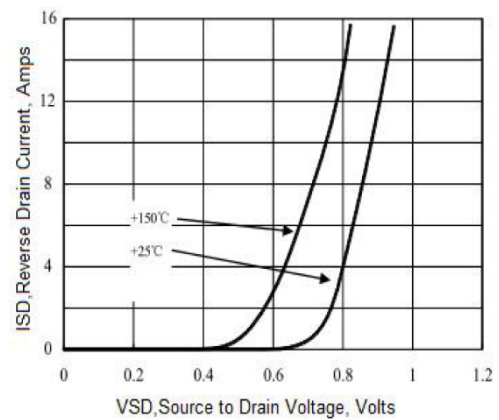


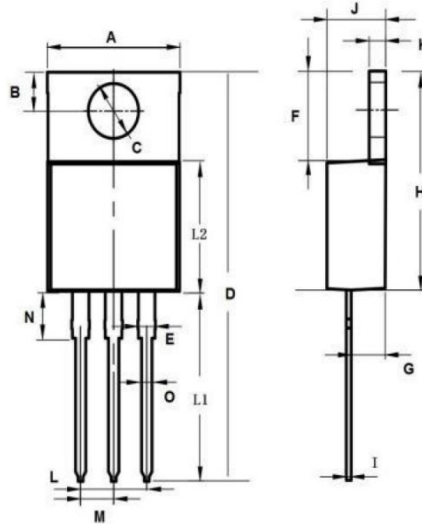
Fig 6. Source-Drain Diode Forward





PACKAGE INFORMATION

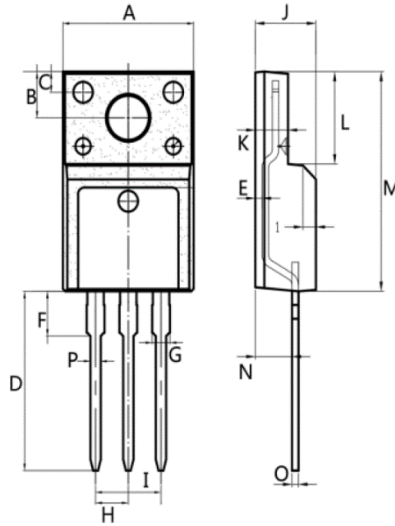
Dimension in TO-220 (Unit: mm)



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



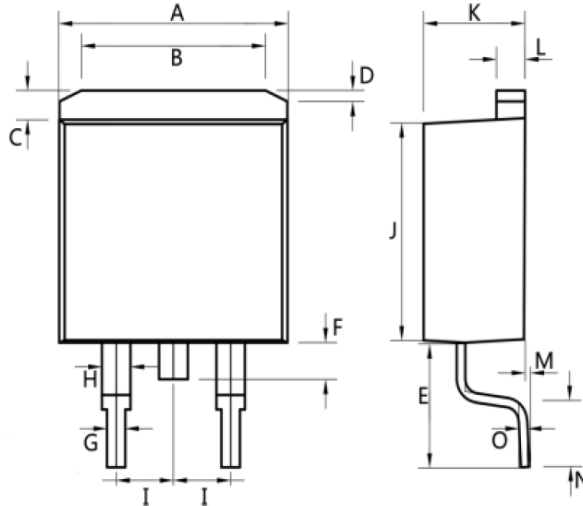
Dimension in TO-220F (Unit: mm)



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



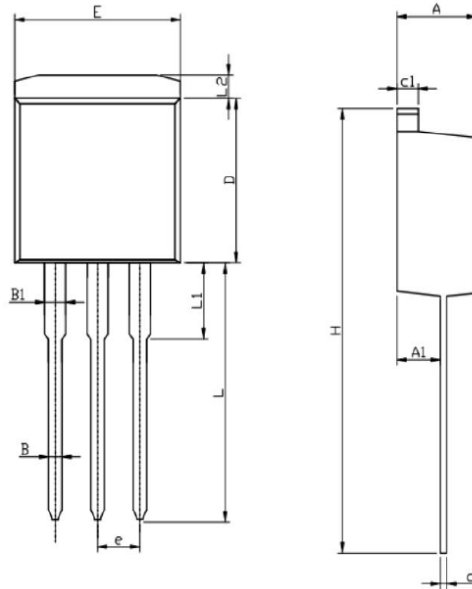
Dimension in TO-263-2 (Unit: mm)



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



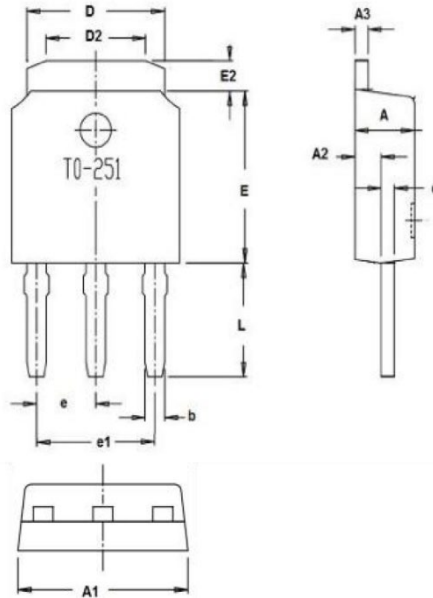
Dimension in TO-263-3(Unit: mm)



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



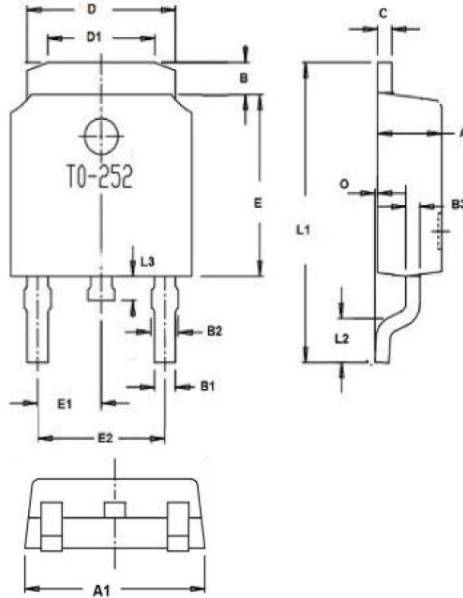
Dimension in TO-251 (Unit: mm)



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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