



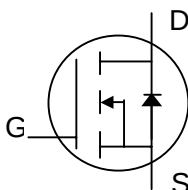
N-channel Enhancement-mode Power MOSFET

Simple Drive Requirement

Low On-resistance

Fast Switching Performance

RoHS-compliant, halogen-free

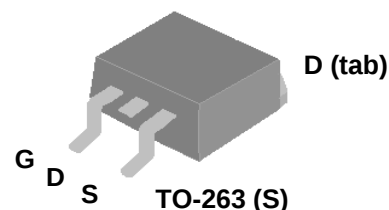


BV_{DSS}	75V
$R_{DS(ON)}$	3.4m Ω
I_D	210A

Description

Advanced Power MOSFETs from APEC provide the designer with the best combination of fast switching, low on-resistance and cost-effectiveness.

The AP97T07AGS-HF-3 is in the TO-263 package, which is widely used for commercial and industrial surface-mount applications, and is well suited for low voltage applications such as DC/DC converters.



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	75	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D at $T_C=25^\circ\text{C}$	Continuous Drain Current (Chip)	210	A
I_D at $T_C=25^\circ\text{C}$	Continuous Drain Current	120	A
I_D at $T_C=100^\circ\text{C}$	Continuous Drain Current	120	A
I_{DM}	Pulsed Drain Current ¹	480	A
P_D at $T_C=25^\circ\text{C}$	Total Power Dissipation	277	W
P_D at $T_A=25$	Total Power Dissipation	3.13	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Value	Units
Rthj-c	Maximum Thermal Resistance, Junction-case	0.45	$^\circ\text{C/W}$
Rthj-a	Maximum Thermal Resistance, Junction-ambient (PCB mount) ⁴	40	$^\circ\text{C/W}$

Ordering Information

AP97T07AGS-HF-3TR : in RoHS-compliant halogen-free TO-263, shipped on tape and reel (800 pcs/reel)



Electrical Specifications at $T_J=25^{\circ}\text{C}$ (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	75	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=10V, I_D=40A$	-	-	3.4	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	2	-	5	V
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=40A$	-	70	-	S
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=75V, V_{GS}=0V$	-	-	25	μA
I_{GSS}	Gate-Source Leakage	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Q_g	Total Gate Charge	$I_D=40A$	-	160	-	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=60V$	-	25	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	$V_{GS}=10V$	-	90	-	nC
$t_{d(on)}$	Turn-on Delay Time	$V_{DS}=40V$	-	115	-	ns
t_r	Rise Time	$I_D=40A$	-	330	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=25\Omega$	-	260	-	ns
t_f	Fall Time	$V_{GS}=10V$	-	350	-	ns
C_{iss}	Input Capacitance	$V_{GS}=0V$	-	6400	-	pF
C_{oss}	Output Capacitance	$V_{DS}=25V$	-	1040	-	pF
C_{rss}	Reverse Transfer Capacitance	$f=1.0\text{MHz}$	-	720	-	pF
R_g	Gate Resistance	$f=1.0\text{MHz}$	-	2.2	-	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage ²	$I_S=40A, V_{GS}=0V$	-	-	1.3	V
t_{rr}	Reverse Recovery Time	$I_S=10A, V_{GS}=0V$	-	70	-	ns
Q_{rr}	Reverse Recovery Charge	$dI/dt=100A/\mu s$	-	175	-	nC

Notes:

1. Pulse width limited by maximum junction temperature.
2. Pulse test
3. Package limitation current is 120A.
4. Surface mounted on 1 in² copper pad of FR4 board

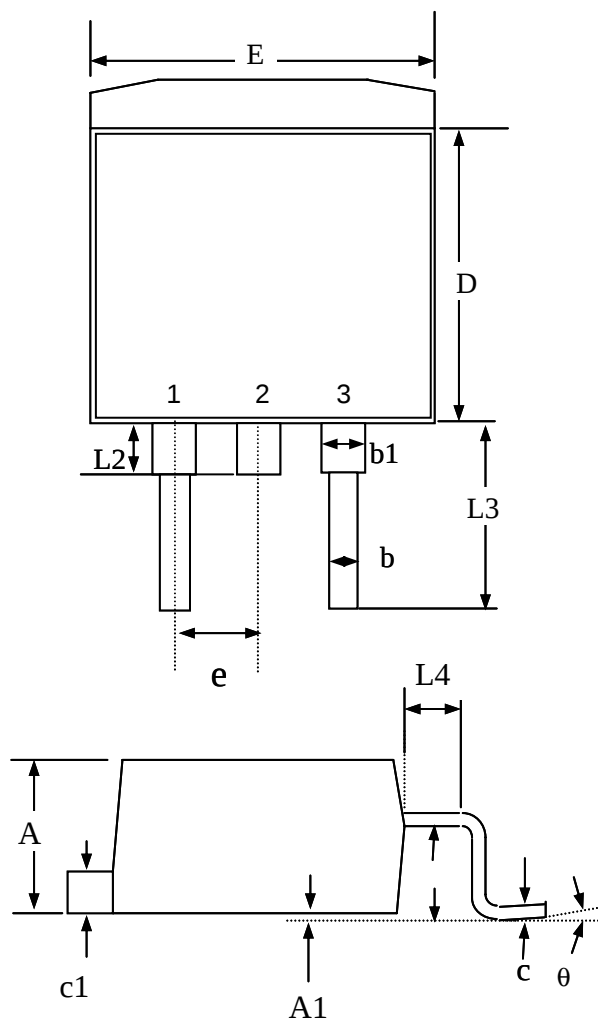
THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

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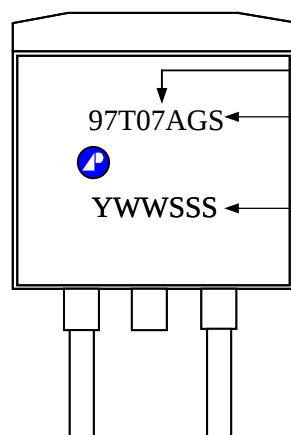
Package Dimensions: TO-263



SYMBOLS	Millimeters		
	MIN	NOM	MAX
A	4.25	4.75	5.20
A1	0.00	0.15	0.30
A2	2.20	2.45	2.70
b	0.70	0.90	1.10
b1	1.07	1.27	1.47
c	0.30	0.45	0.60
c1	1.15	1.30	1.45
D	8.30	8.90	9.40
E	9.70	10.10	10.50
e	2.04	2.54	3.04
L2	----	1.50	----
L3	4.50	4.90	5.30
L4	----	1.50	----

1. All dimensions are in millimeters.
2. Dimensions do not include mold protrusions.

Marking Information: TO-263



Product: AP97T07A

97T07AGS

Package code:

GS = RoHS-compliant halogen-free TO-263



YWWSSS

Date Code (YWWSSS)

Y: Last digit of the year

WW : Work week

SSS : Lot code sequence