

N-CHANNEL MOSFET

Qualified per MIL-PRF-19500/542

DEVICES

2N6756

LEVELS

**JAN
JANTX
JANTXV**

ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

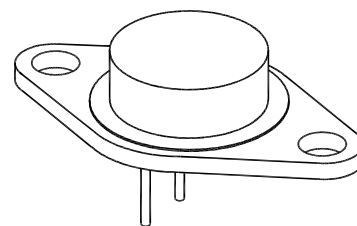
Parameters / Test Conditions	Symbol	Value	Unit
Drain – Source Voltage	V_{DS}	100	Vdc
Gate – Source Voltage	V_{GS}	± 20	Vdc
Continuous Drain Current $T_C = +25^\circ\text{C}$	I_{D1}	14	Adc
Continuous Drain Current $T_C = +100^\circ\text{C}$	I_{D2}	9	Adc
Max. Power Dissipation $T_C = +25^\circ\text{C}$	P_{tl}	75 ⁽¹⁾	W
Drain to Source On State Resistance	$R_{ds(on)}$	0.18 ⁽²⁾	Ω
Operating & Storage Temperature	T_{op}, T_{stg}	-55 to +150	$^\circ\text{C}$

Note: (1) Derated Linearly by 0.6 W/ $^\circ\text{C}$ for $T_C > +25^\circ\text{C}$

(2) $V_{GS} = 10\text{Vdc}$, $I_D = 9\text{A}$

ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$, unless otherwise noted)

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Drain-Source Breakdown Voltage $V_{GS} = 0\text{V}$, $I_D = 1\text{mA}$	$V_{(BR)DSS}$	100		Vdc
Gate-Source Voltage (Threshold) $V_{DS} \geq V_{GS}$, $I_D = 0.25\text{mA}$ $V_{DS} \geq V_{GS}$, $I_D = 0.25\text{mA}$, $T_j = +125^\circ\text{C}$ $V_{DS} \geq V_{GS}$, $I_D = 0.25\text{mA}$, $T_j = -55^\circ\text{C}$	$V_{GS(th)1}$ $V_{GS(th)2}$ $V_{GS(th)3}$	2.0 1.0	4.0 5.0	Vdc
Gate Current $V_{GS} = \pm 20\text{V}$, $V_{DS} = 0\text{V}$ $V_{GS} = \pm 20\text{V}$, $V_{DS} = 0\text{V}$, $T_j = +125^\circ\text{C}$	I_{GSS1} I_{GSS2}		± 100 ± 200	nAdc
Drain Current $V_{GS} = 0\text{V}$, $V_{DS} = 80\text{V}$ $V_{GS} = 0\text{V}$, $V_{DS} = 100\text{V}$, $T_j = +125^\circ\text{C}$ $V_{GS} = 0\text{V}$, $V_{DS} = 80\text{V}$, $T_j = +125^\circ\text{C}$	I_{DSS1} I_{DSS2} I_{DSS3}		25 1.0 0.25	μAdc mAdc mAdc
Static Drain-Source On-State Resistance $V_{GS} = 10\text{V}$, $I_D = 9\text{A}$ pulsed $V_{GS} = 10\text{V}$, $I_D = 14\text{A}$ pulsed $V_{GS} = 10\text{V}$, $I_D = 9\text{A}$ pulsed, $T_j = +125^\circ\text{C}$	$r_{DS(on)1}$ $r_{DS(on)2}$ $r_{DS(on)3}$		0.18 0.21 0.34	Ω Ω Ω
Diode Forward Voltage $V_{GS} = 0\text{V}$, $I_D = 14\text{A}$ pulsed	V_{SD}		1.8	Vdc



**TO-204AA
(TO-3)
2N6756**

DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Gate Charge:				
On-State Gate Charge	$Q_{g(on)}$		35	nC
Gate to Source Charge	Q_{gs}		10	
Gate to Drain Charge	Q_{gd}		15	

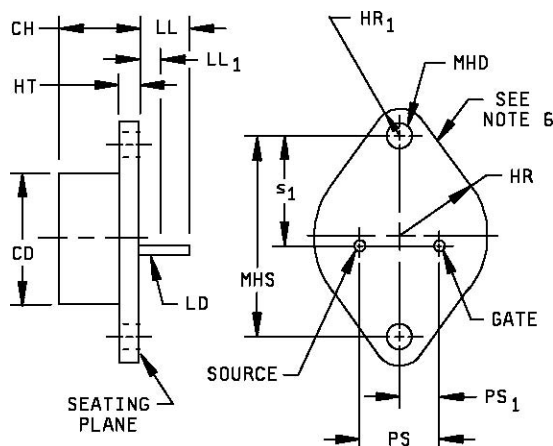
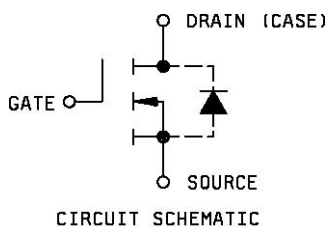
$V_{GS} = 10V, I_D = 14A$
 $V_{DS} = 80V$

SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Switching time tests:				
Turn-on delay time	$t_{d(on)}$		35	ns
Rinse time	t_r		80	
Turn-off delay time	$t_{d(off)}$		60	
Fall time	t_f		45	
Diode Reverse Recovery Time	t_{rr}		300	ns

$I_D = 14A, V_{GS} = 10Vdc,$
Gate drive impedance = $7.5\Omega,$
 $V_{DD} = 50Vdc$
 $di/dt \leq 100A/\mu s, V_{DD} \leq 30V,$
 $I_F = 14A$

PACKAGE DIMENSIONS



NOTES:

- 1 Dimensions are in inches.
- 2 Millimeters are given for general information only.
- 3 These dimensions should be measured at points .050 inch (1.27 mm) and .055 inch (1.40 mm) below seating plane. When gauge is not used measurement will be made at the seating plane.
- 4 The seating plane of the header shall be flat within .001 inch (0.03 mm) concave to .004 inch (0.10 mm) convex inside a .930 inch (23.62 mm) diameter circle on the center of the header and flat within .001 inch (0.03 mm) concave to .006 inch (0.15 mm) convex overall.
- 5 Mounting holes shall be deburred on the seating plane side.
- 6 Drain is electrically connected to the case.
- 7 In accordance with ASME Y14.5M, diameters are equivalent to ϕ x symbology.

Ltr	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD		.875		22.23	
CH	.250	.360	6.35	9.14	
HR	.495	.525	12.57	13.34	
HR1	.131	.188	3.33	4.78	
HT	.060	.135	1.52	3.43	
LD	.038	.043	0.97	1.09	
LL	.312	.500	7.92	12.70	
LL1		.050		1.27	
MHD	.151	.161	3.84	4.09	
MHS	1.177	1.197	29.90	30.40	
PS	.420	.440	10.67	11.18	3, 5
PS1	.205	.225	5.21	5.72	3, 5
s1	.655	.675	16.64	17.15	

* **FIGURE 1: Physical dimensions of transistor (TO-204AA).**