

N-CHANNEL MOSFET
Qualified per MIL-PRF-19500/557

DEVICES

2N6798

LEVELS

JANS

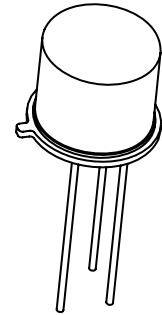
ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

Parameters / Test Conditions	Symbol	Value	Unit
Drain – Source Voltage	V_{DS}	200	Vdc
Gate – Source Voltage	V_{GS}	± 20	Vdc
Continuous Drain Current $T_C = +25^\circ\text{C}$	I_{D1}	5.5	Adc
Continuous Drain Current $T_C = +100^\circ\text{C}$	I_{D2}	3.5	Adc
Max. Power Dissipation	P_{tl}	25 ⁽¹⁾	W
Drain to Source On State Resistance	$R_{ds(on)}$	0.4 ⁽²⁾	Ω
Operating & Storage Temperature	T_{op}, T_{stg}	-55 to +150	$^\circ\text{C}$

Note: (1) Derated Linearly by 0.2 W/ $^\circ\text{C}$ for $T_C > +25^\circ\text{C}$
 (2) $V_{GS} = 10\text{Vdc}$, $I_D = 3.5\text{A}$

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

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Drain-Source Breakdown Voltage $V_{GS} = 0\text{V}$, $I_D = 1\text{mA}$	$V_{(BR)DSS}$	200		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 $V_{GS} = 0\text{V}$, $V_{DS} = 160\text{V}$ $V_{GS} = 0\text{V}$, $V_{DS} = 160\text{V}$, $T_j = +125^\circ\text{C}$	I_{DSS1} I_{DSS2}		25 0.25	μAdc mAdc
Static Drain-Source On-State Resistance $V_{GS} = 10\text{V}$, $I_D = 3.5\text{A}$ pulsed $V_{GS} = 10\text{V}$, $I_D = 5.5\text{A}$ pulsed $T_j = +125^\circ\text{C}$ $V_{GS} = 10\text{V}$, $I_D = 3.5\text{A}$ pulsed	$r_{DS(on)1}$ $r_{DS(on)2}$ $r_{DS(on)3}$		0.4 0.42 0.75	Ω Ω Ω
Diode Forward Voltage $V_{GS} = 0\text{V}$, $I_D = 5.5\text{A}$ pulsed	V_{SD}		1.4	Vdc



TO-205AF
 (formerly TO-39)

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DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Gate Charge:				
On-State Gate Charge	$Q_{g(on)}$		42.07	nC
Gate to Source Charge	Q_{gs}		5.29	
Gate to Drain Charge	Q_{gd}		28.11	

$V_{GS} = 10V, I_D = 5.5A$
 $V_{DS} = 100V$

SWITCHING CHARACTERISTICS

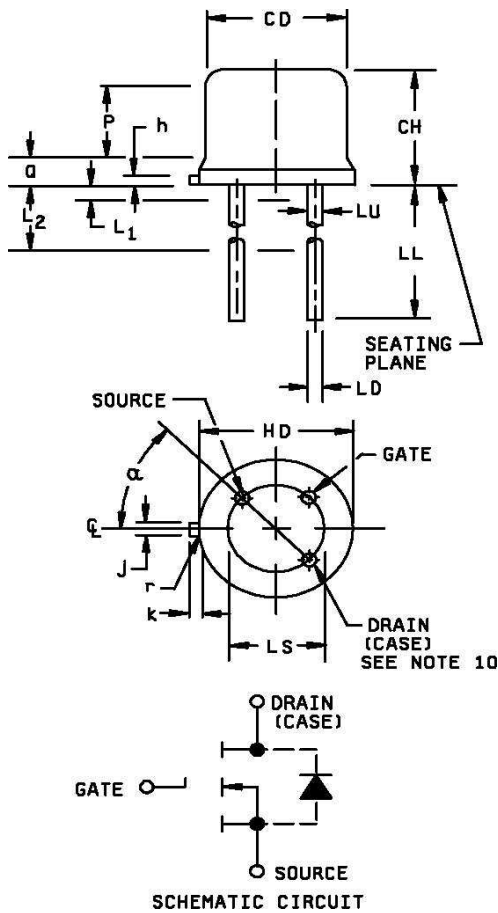
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Switching time tests:				
Turn-on delay time	$t_{d(on)}$		30	ns
Rinse time	t_r		50	
Turn-off delay time	$t_{d(off)}$		50	
Fall time	t_f		40	
Diode Reverse Recovery Time	t_{rr}		500	ns

$I_D = 5.5A, V_{GS} = 10Vdc,$
 Gate drive impedance = $7.5\Omega,$
 $V_{DD} = 77Vdc$

$di/dt \leq 100A/\mu s, V_{DD} \leq 50V,$
 $I_F = 5.5A$

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PACKAGE DIMENSIONS



Ltr	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD	.305	.355	7.75	9.02	
CH	.160	.180	4.07	4.57	
HD	.335	.370	8.51	9.39	
h	.009	.041	0.23	1.04	
J	.028	.034	0.72	0.86	2
k	.029	.045	0.74	1.14	3
LD	.016	.021	0.41	0.53	7, 8
LL	.500	.750	12.7	19.05	7, 8
LS	.200 TP		5.08 TP		6
LU	.016	.019	0.41	0.48	7, 8
L1		.050		1.27	7, 8
L2	.250		6.35		7, 8
P	.070		1.78		5
Q		.050		1.27	4
r		.010		0.25	9
α	45° TP		45° TP		6

NOTES:

- 1 Dimensions are in inches. Millimeters are given for general information only.
- 2 Beyond radius (r) maximum, j shall be held for a minimum length of .011 (0.028 mm).
- 3 Dimension k measured from maximum HD.
- 4 Outline in this zone is not controlled.
- 5 Dimension CD shall not vary more than .010 (0.25 mm) in zone P. This zone is controlled for automatic handling.
- 6 Leads at gauge plane .054 +.001, -.000 (1.37 +0.03, -0.00 mm) below seating plane shall be within .007 (0.18 mm) radius of true position (TP) at maximum material condition (MMC) relative to tab at MMC.
- 7 LU applies between L1 and L2. LD applies between L2 and L minimum. Diameter is uncontrolled in L1 and beyond LL minimum.
- 8 All three leads.
- 9 Radius (r) applies to both inside corners of tab.
- 10 Drain is electrically connected to the case.
- 11 In accordance with ASME Y14.5M, diameters are equivalent to φx symbology.

* **FIGURE 1. Physical dimensions for TO-205AF.**