

## N-CHANNEL MOSFET

Qualified per MIL-PRF-19500/556

### DEVICES

**2N6784 2N6784U**

### LEVELS

**JAN  
 JANTX  
 JANTXV**

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

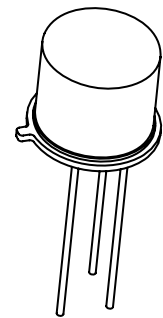
Parameters / Test Conditions	Symbol	Value	Unit
Drain – Source Voltage	$V_{DS}$	200	Vdc
Gate – Source Voltage	$V_{GS}$	$\pm 20$	Vdc
Continuous Drain Current $T_C = +25^\circ\text{C}$	$I_{D1}$	2.25	Adc
Continuous Drain Current $T_C = +100^\circ\text{C}$	$I_{D2}$	1.5	Adc
Max. Power Dissipation	$P_{tl}$	15 <sup>(1)</sup>	W
Drain to Source On State Resistance	$R_{ds(on)}$	1.5 <sup>(2)</sup>	$\Omega$
Operating & Storage Temperature	$T_{op}, T_{stg}$	-55 to +150	$^\circ\text{C}$

**Note:** (1) Derated Linearly by 0.12 W/ $^\circ\text{C}$  for  $T_C > +25^\circ\text{C}$

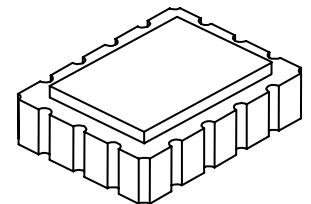
(2)  $V_{GS} = 10\text{Vdc}$ ,  $I_D = 1.5\text{A}$

### 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 $V_{GS} = \pm 20\text{V}$ , $V_{DS} = 0\text{V}$ $V_{GS} = \pm 20\text{V}$ , $V_{DS} = 0\text{V}$ , $T_j = +125^\circ\text{C}$	$I_{GSS1}$ $I_{GSS2}$		$\pm 100$ $\pm 200$	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	$\mu\text{Adc}$ mAdc
Static Drain-Source On-State Resistance $V_{GS} = 10\text{V}$ , $I_D = 1.5\text{A}$ pulsed $V_{GS} = 10\text{V}$ , $I_D = 2.25\text{A}$ pulsed $T_j = +125^\circ\text{C}$ $V_{GS} = 10\text{V}$ , $I_D = 1.5\text{A}$ pulsed	$r_{DS(on)1}$ $r_{DS(on)2}$ $r_{DS(on)3}$		1.5 1.6 2.81	$\Omega$ $\Omega$ $\Omega$
Diode Forward Voltage $V_{GS} = 0\text{V}$ , $I_D = 2.25\text{A}$ pulsed	$V_{SD}$		1.5	Vdc



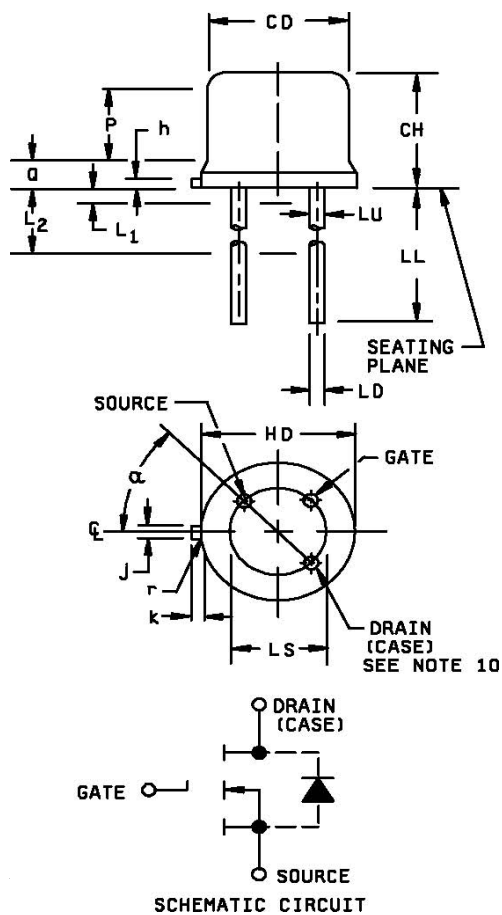
**TO-205AF**  
(formerly TO-39)



**U – 18 LCC**



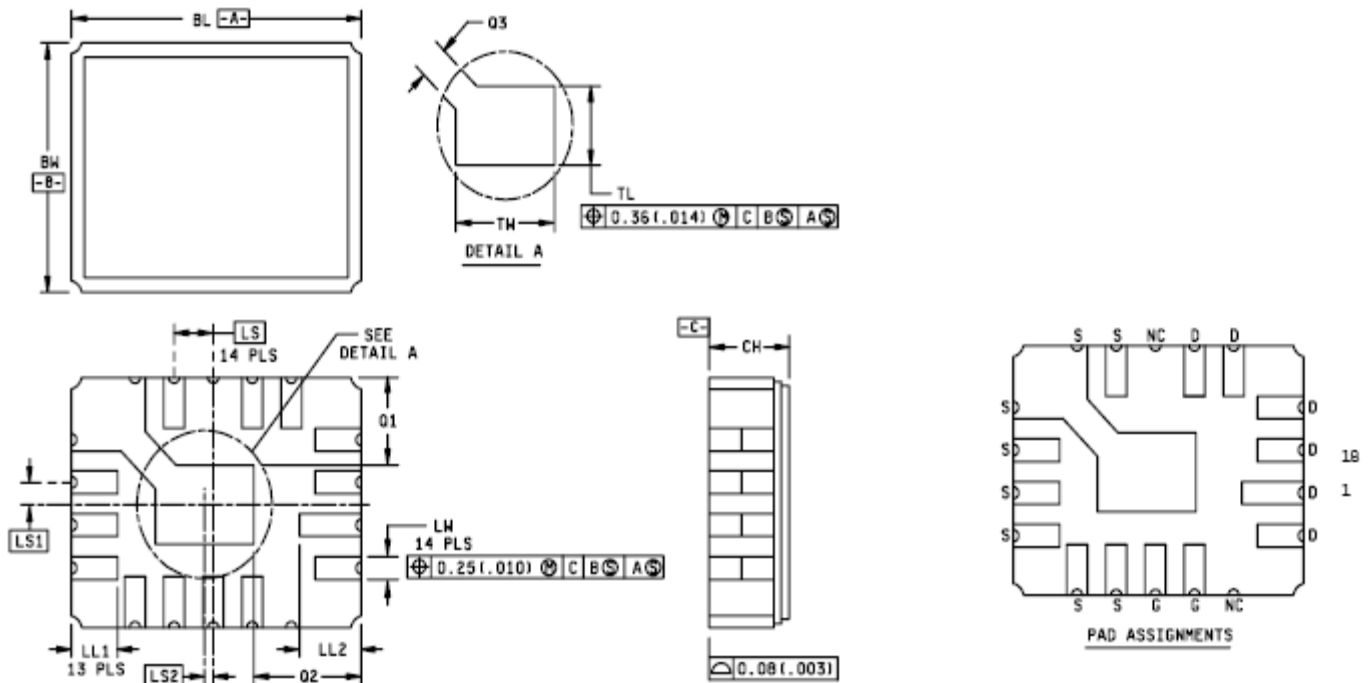
## PACKAGE DIMENSIONS



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
L <sub>1</sub>		.050		1.27	7, 8
L <sub>2</sub>	.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

- 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 L<sub>1</sub> and L<sub>2</sub>. LD applies between L<sub>2</sub> and L minimum. Diameter is uncontrolled in L<sub>1</sub> 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.**



**NOTES:**

- 1 Dimensions are in inches.
- 2 Millimeters are given for general information only.
- 3 In accordance with ASME Y14.5M, diameters are equivalent to  $\phi$ x symbology.
- 4 Ceramic package only.

Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BL	.345	.360	8.77	
BW	.280	.295	7.11	
CH	.095	.115	2.41	
LL <sub>1</sub>	.040	.055	1.02	
LL <sub>2</sub>	.055	.065	1.40	
LS	.050 BSC		1.27 BSC	
LS <sub>1</sub>	.025 BSC		0.635 BSC	
LS <sub>2</sub>	.008 BSC		0.203 BSC	
LW	.020	.030	0.51	0.76
Q <sub>1</sub>	.105 REF		2.67 REF	
Q <sub>2</sub>	.120 REF		3.05 REF	
Q <sub>3</sub>	.045	.055	1.14	1.40
TL	.070	.080	1.78	2.03
TW	.120	.130	3.05	3.30

**FIGURE 2. Physical dimensions for LCC.**