

N-CHANNEL MOSFET

Qualified per MIL-PRF-19500/556

DEVICES

2N6782 2N6782U

LEVELS

**JAN
 JANTX
 JANTXV**

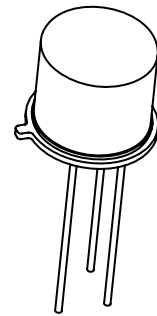
ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

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}	3.5	Adc
Continuous Drain Current $T_C = +100^\circ\text{C}$	I_{D2}	2.25	Adc
Max. Power Dissipation	P_{tl}	15 ⁽¹⁾	W
Drain to Source On State Resistance	$R_{ds(on)}$	0.61 ⁽²⁾	Ω
Operating & Storage Temperature	T_{op}, T_{stg}	-55 to +150	$^\circ\text{C}$

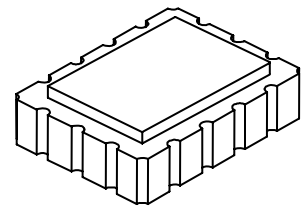
Note: (1) Derated Linearly by 0.12 W/ $^\circ\text{C}$ for $T_C > +25^\circ\text{C}$
 (2) $V_{GS} = 10\text{Vdc}$, $I_D = 3.5\text{A}$

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) $V_{DS} \geq V_{GS}$, $I_D = 0.25\text{mA}$	$V_{GS(th)1}$	2.0	4.0	Vdc
$V_{DS} \geq V_{GS}$, $I_D = 0.25\text{mA}$, $T_j = +125^\circ\text{C}$	$V_{GS(th)2}$	1.0		
$V_{DS} \geq V_{GS}$, $I_D = 0.25\text{mA}$, $T_j = -55^\circ\text{C}$	$V_{GS(th)3}$		5.0	
Gate Current $V_{GS} = \pm 20\text{V}$, $V_{DS} = 0\text{V}$	I_{GSS1}		± 100	nA dc
$V_{GS} = \pm 20\text{V}$, $V_{DS} = 0\text{V}$, $T_j = +125^\circ\text{C}$	I_{GSS2}		± 200	
Drain Current $V_{GS} = 0\text{V}$, $V_{DS} = 80\text{V}$	I_{DSS1}		25	μA dc
$V_{GS} = 0\text{V}$, $V_{DS} = 80\text{V}$, $T_j = +125^\circ\text{C}$	I_{DSS2}		0.25	mA dc
Static Drain-Source On-State Resistance $V_{GS} = 10\text{V}$, $I_D = 2.25\text{A}$ pulsed	$r_{DS(on)1}$		0.60	Ω
$V_{GS} = 10\text{V}$, $I_D = 3.5\text{A}$ pulsed	$r_{DS(on)2}$		0.61	Ω
$T_j = +125^\circ\text{C}$				
$V_{GS} = 10\text{V}$, $I_D = 2.25\text{A}$ pulsed	$r_{DS(on)3}$		1.08	Ω
Diode Forward Voltage $V_{GS} = 0\text{V}$, $I_D = 3.5\text{A}$ pulsed	V_{SD}		1.5	Vdc



TO-205AF
(formerly TO-39)



U – 18 LCC



TECHNICAL DATA SHEET

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DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Gate Charge: On-State Gate Charge Gate to Source Charge Gate to Drain Charge	$Q_{g(on)}$ Q_{gs} Q_{gd}		8.1 1.7 4.5	nC

$V_{GS} = 10V, I_D = 3.5A$
 $V_{DS} = 50V$

SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Switching time tests: Turn-on delay time Rinse time Turn-off delay time Fall time	$t_{d(on)}$ t_r $t_{d(off)}$ t_f		15 25 25 20	ns
Diode Reverse Recovery Time	t_{rr}		180	ns

$I_D = 3.5A, V_{GS} = 10Vdc,$
 Gate drive impedance = $7.5\Omega,$
 $V_{DD} = 50Vdc$

$di/dt \leq 100A/\mu s, V_{DD} \leq 50V,$
 $I_F = 3.5A$