



6 Lake Street, Lawrence, MA 01841
1-800-446-1158 / (978) 620-2600 / Fax: (978) 689-0803
Website: <http://www.microsemi.com>

TECHNICAL DATA SHEET

N-CHANNEL MOSFET Qualified per MIL-PRF-19500/592

DEVICES

2N7227 2N7227U

LEVELS

JAN
JANTX
JANTXV

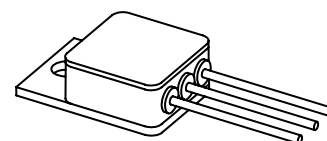
ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

Parameters / Test Conditions	Symbol	Value	Unit
Drain – Source Voltage	V_{DS}	400	Vdc
Gate – Source Voltage	V_{GS}	± 20	Vdc
Continuous Drain Current $T_C = +25^\circ\text{C}$	I_{D1}	14.0	Adc
Continuous Drain Current $T_C = +100^\circ\text{C}$	I_{D2}	9.0	Adc
Max. Power Dissipation $T_C = +25^\circ\text{C}$	P_{tl}	150 ⁽¹⁾	W
Drain to Source On State Resistance	$R_{ds(on)}$	0.315 ⁽²⁾	Ω
Operating & Storage Temperature	T_{op}, T_{stg}	-55 to +150	$^\circ\text{C}$

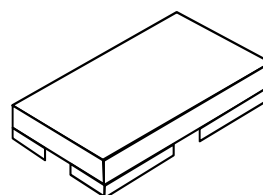
Note: (1) Derated Linearly by 1.2 W/ $^\circ\text{C}$ for $T_C > +25^\circ\text{C}$
(2) $V_{GS} = 10\text{Vdc}$, $I_D = 9\text{A}$

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

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Drain-Source Breakdown Voltage $V_{GS} = 0\text{V}$, $I_D = 1\text{mA}$	$V_{(BR)DSS}$	400		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 $V_{GS} = 0\text{V}$, $V_{DS} = 320\text{V}$ $V_{GS} = 0\text{V}$, $V_{DS} = 320\text{V}$, $T_j = +125^\circ\text{C}$	I_{DSS1} I_{DSS2}		25 0.25	μAdc mAdc
Static Drain-Source On-State Resistance $V_{GS} = 10\text{V}$, $I_D = 9.0\text{A}$ pulsed $V_{GS} = 10\text{V}$, $I_D = 14.0\text{A}$ pulsed $T_j = +125^\circ\text{C}$ $V_{GS} = 10\text{V}$, $I_D = 9.0\text{A}$ pulsed	$r_{DS(on)1}$ $r_{DS(on)2}$ $r_{DS(on)3}$		0.315 0.415 0.68	Ω Ω Ω
Diode Forward Voltage $V_{GS} = 0\text{V}$, $I_D = 14\text{A}$ pulsed	V_{SD}		1.7	Vdc



TO-254AA



U-PKG (U3)
TO-276AB



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DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Gate Charge:				
On-State Gate Charge	$Q_{g(on)}$		110	nC
Gate to Source Charge	Q_{gs}		18	
Gate to Drain Charge	Q_{gd}		65	
$V_{GS} = 10V, I_D = 14A$ $V_{DS} = 50V$				

SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Switching time tests:				
Turn-on delay time	$t_{d(on)}$		35	ns
Rise time	t_r		190	
Turn-off delay time	$t_{d(off)}$		170	
Fall time	t_f		130	
$I_D = 14A, V_{GS} = 10Vdc,$ Gate drive impedance = 7.5Ω , $V_{DD} = 200Vdc$				
Diode Reverse Recovery Time	t_{rr}		1200	ns
$di/dt \leq 100A/\mu s, V_{DD} \leq 30V,$ $I_F = 14A$				