NEW ENGLAND SEMICONDUCTOR

Technical Data

2N4856 JAN, JTX, JTXV
2N4857 JAN, JTX, JTXV
2N4858 JAN, JTX, JTXV
2N4859 JAN, JTX, JTXV
2N4860 JAN, JTX, JTXV
2N4861 JAN, JTX, JTXV

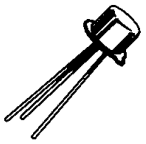
MIL-PRF QPL DEVICES

POWER MOSFET N CHANNEL

Processed per MIL-PRF-19500/385

ABSOLUTE MAXIMUM RATINGS (T_C = 25^{0}C unless otherwise noted)

Parameters / Test Conditions		Symbol	2N4856 2N4857 2N4858	2N4859 2N4860 2N4861	Unit
Gate-Source Voltage		V_{GS}	-40	-30	V
Drain-Source Voltage		V_{DS}	40	30	V
Drain-Gate Voltage		V_{DG}	40	30	V
Gate Current		I_G	50		mA
Power Dissipation	T_A = 25^{0}C (1)	P_T	0.36		W
	T_C = 25^{0}C (2)		1.8		W
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-65 to +200		^{0}C



TO-18 (TO-206AA)

(1) Derate linearly 2.06 mW/^{0}C for T_A > 25^{0}C.
(2) Derate linearly 10.3 mW/^{0}C for T_C > 25^{0}C.

ELECTRICAL CHARACTERISTICS (T_C = 25^{0}C unless otherwise noted)

Parameters / Test Conditions		Symbol	Min.	Max.	Units
Gate-Source Breakdown Voltage					
V_{DS} = 0, I_G = 1.0 μAdc	2N4856, 2N4857, 2N4858	$V_{(BR)GSS}$	-40		Vdc
	2N4859, 2N4860, 2N4861		-30		
Gate-Source "Off" State Voltage					
V_{DS} = 15 Vdc, I_D = 0.5 ηAdc	2N4856, 2N4859		-4.0	-10	
	2N4857, 2N4860	$V_{GS(on)}$	-2.0	-6.0	Vdc
	2N4858, 2N4861		-0.8	-4.0	
Gate Reverse Current					
V_{DS} = 0, V_{GS} = -20 Vdc	2N4856, 2N4857, 2N4858	I_{GSS}		-0.25	ηA
V_{DS} = 0, V_{GS} = -15 Vdc	2N4859, 2N4860, 2N4861			-0.25	
Drain Current					
V_{GS} = -10 Vds, V_{DS} = 15 Vdc		$I_{D(off)}$		0.25	ηA

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ELECTRICAL CHARACTERISTICS (T_C = 25^{0}C unless otherwise noted) (con't)

Parameters / Test Conditions		Symbol	Min.	Max.	Units
Drain Current					
V_{GS} = 0, V_{DS} = 15 Vdc	2N4856, 2N4859	I_{DSS}	50	175	
	2N4857, 2N4860		20	100	mA
	2N4858, 2N4861		8.0	80	
Static Drain - Source "On" State Resistance					
V_{GS} = 0, I_D = 1.0 mAdc	2N4856, 2N4859			25	
	2N4857, 2N4860	$r_{ds(on)}$		40	Ω
	2N4858, 2N4861			60	
Drain-Source "On" State Voltage					
V_{GS} = 0, I_D = 20 mAdc	2N4856, 2N4859			0.75	
V_{GS} = 0, I_D = 10 mAdc	2N4857, 2N4860	$V_{DS(on)}$		0.50	Vdc
V_{GS} = 0, I_D = 5.0 mAdc	2N4858, 2N4861			0.50	
Small-Signal, Common-Source Reverse Transfer Capacitance					
V_{GS} = -10 Vdc, V_{DS} = 0, f = 1.0 MHz		C_{rss}		8.0	pF
C_1 = 0.1µF, $L_1 = L_2 \geq 500$ µH					
Small-Signal, Common-Source Short-Circuit Input Capacitance					
V_{GS} = -10 Vdc, V_{DS} = 0, f = 1.0 MHz		C_{iss}		18	pF
C_1 = 0.1µF, C_2 = 20.1 m					
$FL_1 = L_2 \geq 500$ µH					