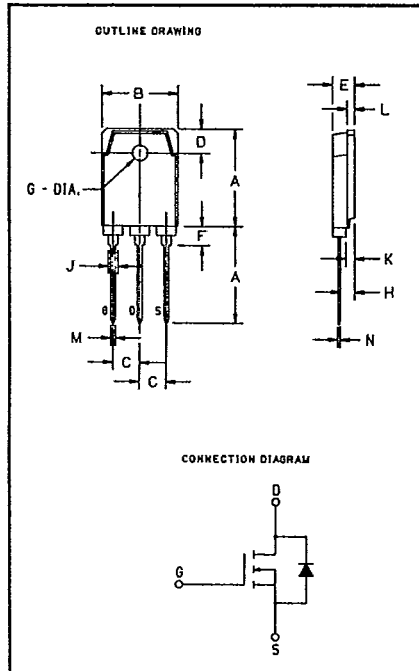


POWEREX**JS0245A1**

T-39-13

JS0250A1**Tentative**

Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

**Single EXMOS™
MOSFET****15 Amperes/450-500 Volts****450-500 Volts JS0245A1, JS0250A1
Outline Drawing**

Dimension	Inches	Millimeters
A	.787	20
B	.614	15.6
C	.214 ± .008	5.45 ± 0.2
D	.197	5
E	.177	4.5
F	.157	4
G	.126 ± .008 Dia.	3.2 ± 0.2 Dia.
H	.110	2.8
J	.079	2
K	.071	1.8
L	.059	1.5
M	.039	1
N	.024	0.6

Description

Powerex Single EXMOS™ MOSFET Transistors are designed for use in applications requiring Hi-Frequency switching and low loss control.

Features:

- ☐ TO-3P Package
- ☐ Vertical DMOS Construction
- ☐ High Speed Body Diode
- ☐ Low Drive Requirement
- ☐ No Second Breakdown

Applications:

- ☐ AC Motor Control
- ☐ UPS Inverters
- ☐ Switch Mode Power Supply
- ☐ PWM Regulator

Ordering Information

Select the complete eight digit module part number you desire from the table-i.e. JS0250A1 is a 500 Volt, 15 Ampere Single EXMOS™ MOSFET.

Type	V _{DS} Volts (×10)	Current Rating Amperes (15)
JS02	45	A1
	50	



T-39-13

Tentative

Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272

JS0245A1

JS0250A1

Single EXMOS™ MOSFET

15 Amperes/450-500 Volts

Maximum Ratings $T_c = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	JS0245A1/JS0250A1	Units
Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^\circ\text{C}$
Drain Source Voltage, $I_D = 1\text{mA}$, $V_{GS} = 0\text{V}$	V_{DSS}	450/500	Volts
Gate-Source Voltage	V_{GSS}	± 20	Volts
Continuous Drain Current	I_D	9	Amperes
Continuous Source Current	I_S	9	Amperes
Pulsed Drain Current Repetitive	I_{DM}	45	Amperes
Power Dissipation	P_T	100	Watts
Max. Mounting Torque, Mounting Screw (M3)	—	7	in.-lb.

Static Electrical Characteristics $T_c, T_J = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	JS0245A1/JS0250A1			Units
			Min.	Typ.	Max.	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = V_{DSS}$, $V_{GS} = 0\text{V}$	—	—	1	mA
Gate Source Leakage Current	$\pm I_{GSS}$	$V_{GS} = \pm V_{GSS}$, $V_{DS} = 0\text{V}$	—	—	0.1	μA
Gate Source Threshold Voltage	$V_{GS(th)}$	$I_D = 1\text{mA}$, $V_{DS} = 10\text{V}$	2	3	4	Volts
Drain Source On State Resistance	$R_{DS(on)}$	$V_{GS} = 15\text{V}$, $I_D = 7.5\text{A}$	—	—	0.6	Ω
Drain Source On State Voltage	$V_{DS(on)}$	$V_{GS} = 15\text{V}$, $I_D = 7.5\text{A}$	—	—	4.5	Volts
Thermal Resistance, Junction to Case	$R_{\theta JC}$	—	—	—	1.25	$^\circ\text{C/W}$

Source Drain Diode Characteristics $T_c, T_J = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	JS0245A1/JS0250A1			Units
			Min.	Typ.	Max.	
Source-Drain Voltage	V_{SD}	$I_S = 15\text{A}$, $V_{GS} = 0\text{V}$	—	—	2.5	Volts
Reverse Recovery Time	t_{rr}	$I_S = 15\text{A}$, $V_{GS} = 0\text{V}$, $dI_S/dt = -30\text{A}/\mu\text{s}$	—	250	—	ns

Dynamic Electrical Characteristics $T_c, T_J = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	JS0245A1/JS0250A1			Units
			Min.	Typ.	Max.	
Forward Transconductance	g_{fs}	$I_D = 15\text{A}$, $V_{DS} = 10\text{V}$	7	—	—	mhos
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 10\text{V}$, $f = 1\text{MHz}$	—	3000	—	pF
Output Capacitance	C_{oss}		—	1500	—	pF
Reverse Transfer Capacitance	C_{rss}		—	600	—	pF
Turn On Time (Note 1)	t_{on}	$V_{DD} = 0.6 V_{DSS}$, $I_D = 15\text{A}$, $V_{GS} = 15\text{V}$	—	—	500	ns
Turn Off Time (Note 1)	t_{off}	$R_{GEN} = R_{GS} = 50\Omega$	—	—	900	ns

Note 1. Turn on Time (t_{on}) = Turn on Delay ($t_{d(on)}$) + Rise Time (t_r)
 Turn-off Time (t_{off}) = Turn off Delay ($t_{d(off)}$) + Fall Time (t_f)

This specification is tentative;
 therefore, performance curves are not
 included. Please contact the Powerex
 sales representative nearest you for
 further information.