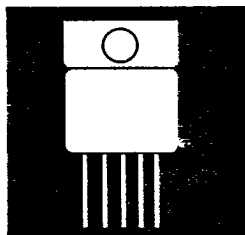


T-52-13-25

POWER MOSFETS IN 5 PIN HERMETIC SIP PACKAGE

OMNIREL CORP



Complementary N-Channel And P-Channel Power MOSFETs In 5 Pin Hermetic SIP Package

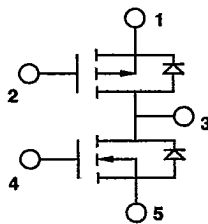
FEATURES

- Low $R_{DS(on)}$
- Fast Switching
- Easy To Heat Sink
- 4 Voltage, Current Ratings
- Small Isolated Hermetic Package

DESCRIPTION

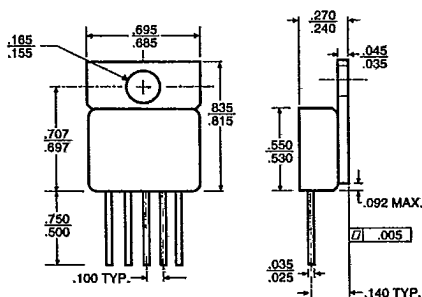
This series of hermetically packaged products feature the latest advanced MOSFET and packaging technology. They are ideally suited for Military requirements where small size, high performance and high reliability are required, and in applications such as switching power supplies, motor controls, inverters, choppers, audio amplifiers and high energy pulse circuits.

SCHEMATIC

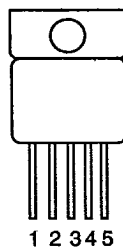


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MECHANICAL OUTLINE



PIN CONNECTION



- 1 Pch Source
- 2 Pch Gate
- 3 Output
- 4 Nch Gate
- 5 Nch Source

1 07 R1
Supersedes 8 12 R0

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OmniRel

ELECTRICAL CHARACTERISTICS: T = 25° unless otherwise noted

Characteristic	Symbol	N Channel								Units
		OM9323SC		OM9324SC		OM9325SC		OM9326SC		
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Drain Source Breakdown Voltage $V_{GS} = 0, I_D = .25 \text{ ma}$	$V_{(BR)DSS}$	50		60		80		100		V_{dc}
Zero Gate Voltage Drain Current $V_{DS} = \text{rated } V_{DSS}, V_{GS} = 0$ $V_{DS} = \text{rated } V_{DSS}, V_{GS} = 0, T = 125^\circ \text{ C}$	I_{DSS}		10 100	10 100			10 100		10 100	μA d.c.
Gate Body Leakage Current Forward $V_{GSF} = 20 \text{ V}, V_{DS} = 0$	I_{GSSF}		100		100		100		100	na
Gate Body Leakage Current Reverse $V_{GSR} = 20 \text{ V}, V_{DS} = 0$	I_{GSSR}		100		100		100		100	na
Gate Threshold Voltage $(V_{DS} = V_{GS}, I_D = 1 \text{ ma}), T_J = 100^\circ \text{ C}$	$V_{GS(th)}$	1.5	4.0	1.5	4.0	1.5	4.0	1.5	4.0	V_{dc}
Static Drain Source On Resistance $V_{GS} = 10 \text{ V}_{dc}, I_D = 15 \text{ A}_{dc}$	$r_{DS(on)}$		.08		.08		.10		.10	Ω
Drain Source On Voltage $V_{GS} = 10 \text{ V}, I_D = 15 \text{ A}, T_J = 100^\circ \text{ C}$	$V_{DS(on)}$		2.4		2.4		3.0		3.0	V_{dc}
Forward Transconductance $V_{DS} = 10 \text{ V}, I_D = 12 \text{ A}$	g_{FS}	8		8		5		5		mhos
Input Capacitance $V_{DS} = 25 \text{ V}$	C_{iss}		2000		2000		2000		2000	pf
Output Capacitance $V_{GS} = 0$	C_{oss}		1500		1500		1500		1500	pf
Reverse Transfer Capacitance $f = 1 \text{ Mhz}$	C_{rss}		400		400		400		400	pf
Turn On Delay Time $V_{DD} = 25 \text{ V}, I_D = 5 \text{ A}$	$T_{d(on)}$		60		60		60		60	nsec
Turn Off Delay Time $V_{DD} = 25 \text{ V}, I_D = 5 \text{ A}$	$T_{d(off)}$		150		150		150		150	nsec
Source Drain Diode Forward On Voltage $I_s = 10 \text{ A}$	V_{SD}		1.8		1.8		1.8		1.8	V_{dc}

T-52-13-25
OMNIREL CORP

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T-52-13-25

ELECTRICAL CHARACTERISTICS: $T = 25^\circ$ unless otherwise noted

Characteristic	Symbol	P Channel						Units
		OM9323SC		OM9324SC		OM9325SC		
		Min.	Max.	Min.	Max.	Min.	Max.	
Drain Source Breakdown Voltage $V_{GS} = 0, I_D = .25 \text{ ma}$	$V_{(BR)DSS}$	50		60		80	100	V_{dc}
Zero Gate Voltage Drain Current $V_{DS} = \text{rated } V_{DSS}, V_{GS} = 0$ $V_{DS} = \text{rated } V_{DSS}, V_{GS} = 0, T = 125^\circ \text{ C}$	I_{DSS}		10 100		10 100		10 100	μA d.c.
Gate Body Leakage Current Forward $V_{GSF} = 20 \text{ V}, V_{DS} = 0$	I_{GSSF}		100		100		100	na
Gate Body Leakage Current Reverse $V_{GSR} = 20 \text{ V}, V_{DS} = 0$	I_{GSSR}		100		100		100	na
Gate Threshold Voltage $(V_{DS} = V_{GS}, I_D = 1 \text{ ma}), T_J = 100^\circ \text{ C}$	$V_{GS(th)}$	1.5	4.0	1.5	4.0	1.5	4.0	V_{dc}
Static Drain Source On Resistance $V_{GS} = 10 \text{ V}_{dc}, I_D = 10 \text{ A}_{dc}$	$r_{DS(on)}$		.16		.16		.17	Ω
Drain Source On Voltage $V_{GS} = 10 \text{ V}, I_D = 10 \text{ A}, T_J = 100^\circ \text{ C}$	$V_{DS(on)}$		3.2		3.2		3.4	V_{dc}
Forward Transconductance $V_{DS} = 10 \text{ V}, I_D = 10 \text{ A}$	g_{FS}	5		5		5		mhos
Input Capacitance $V_{DS} = 25\text{V}$	C_{iss}		2000		2000		2000	pf
Output Capacitance $V_{GS} = 0$	C_{oss}		950		950		950	pf
Reverse Transfer Capacitance $f = 1 \text{ Mhz}$	C_{rss}		400		400		400	pf
Turn On Delay Time $V_{DD} = 25 \text{ V}, I_D = 5 \text{ A}$	$T_{d(on)}$		50		50		45	nsec
Turn Off Delay Time $V_{DD} = 25 \text{ V}, I_D = 5 \text{ A}$	$T_{d(off)}$		150		150		150	nsec
Source Drain Diode Forward On Voltage $I_f = 10\text{A}$	V_{SD}		5		5		4	V_{dc}

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MAXIMUM RATINGS

Rating	Symbol	N Channel				Unit
		9323	9324	9325	9326	
Drain Source Voltage	V _{DSS}	50	60	80	100	V _{dc}
Drain Gate Voltage R _{GS} = 1.0 MΩ	V _{DGR}	50	60	80	100	V _{dc}
Gate Source Voltage Continuous	V _{GS}	± 20				V _{dc}
Non-Repetitive T _p < 50 μsec	V _{GSM}	± 40				V _{PK}
Drain Current Continuous	I _D	15		10		A _{dc}
Pulsed	I _{DM}	50		40		A _{dc}
Total Power Dissipation @ T = 25° C	P _D	75				Watts
Derate above T = 25° C	P _D	1.5				W/° C
Operating and Storage Temp. Range	T _J , T _{slg}	-65 to 150				° C

MAXIMUM RATINGS

Rating	Symbol	P Channel				Unit
		9323	9324	9325	9326	
Drain Source Voltage	V _{DSS}	50	60	80	100	V _{DC}
Drain Gate Voltage R _{GS} = 1.0 MΩ	V _{DGR}	50	60	80	100	V _{dc}
Gate Source Voltage Continuous	V _{GS}	± 20				V _{dc}
Non-Repetitive T _P < 50 μsec	V _{GSM}	± 40				V _{PK}
Drain Current Continuous	I _D	15		10		A _{dc}
Pulsed	I _{DM}	50		40		A _{dc}
Total Power Dissipation @ T = 25° C	P _D	75				Watts
Derate above T = 25° C	P _D	1.67				W/° C
Operating and Storage Temp. Range	T _J , T _{slg}	-65 to 150				° C

THERMAL CHARACTERISTICS

Thermal Resistance			
Junction to Case	$R_{\theta JC}$	0.6	$^\circ C/W$
Junction to Ambient	$R_{\theta JA}$	30	$^\circ C/W$
Max. Lead Temp. for Soldering; 1/8" from case for 5 seconds	T_L	275	$^\circ C$



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