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N-CHANNEL POWER MOS FET ARRAY  
SWITCHING TYPE

DESCRIPTION

The  $\mu$ PA1524 is N-channel Power MOS FET Array that built in 4 circuits designed for solenoid, motor and lamp driver.

FEATURES

- 4 V driving is possible
- Large Current and Low On-state Resistance  
 $I_{D(pulse)} = \pm 6$  A  
 $R_{DS(on)} \leq 0.6 \Omega$  TYP. ( $V_{GS} = 10$  V)  
 $R_{DS(on)} \leq 0.8 \Omega$  TYP. ( $V_{GS} = 4$  V)
- 2.54 mm Pitch (0.1 inch)

ORDERING INFORMATION

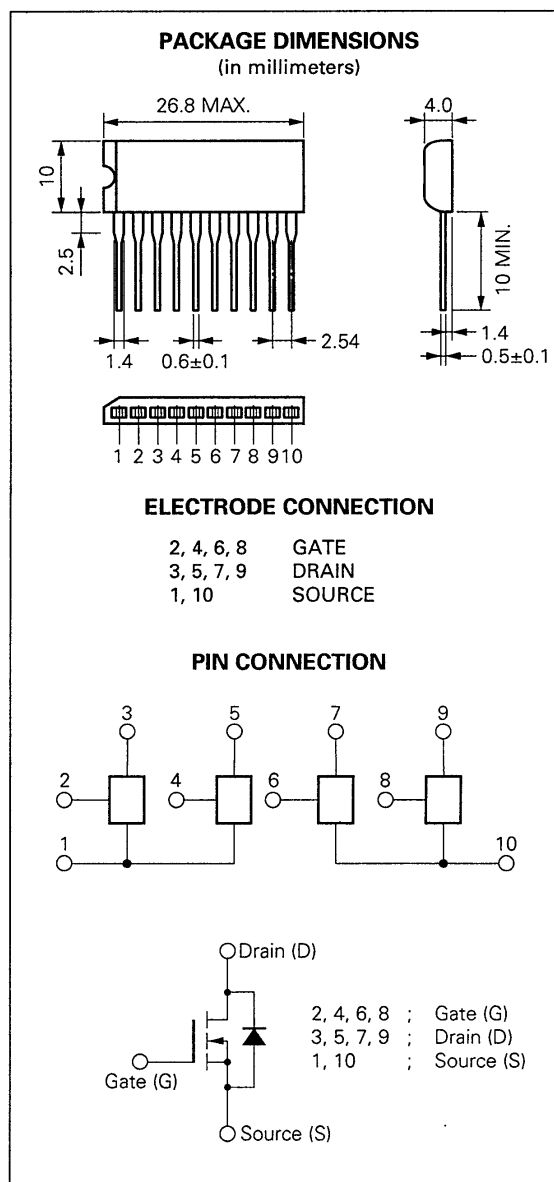
Part Number	Package	Quality Grade
$\mu$ PA1524H	10-Pin SIP	Standard

Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Drain to Source Voltage	$V_{DSS}$	80	V
Gate to Source Voltage	$V_{GSS(AC)}$	$\pm 20$	V
Drain Current (DC)	$I_{D(DC)}$	$\pm 2.0$	A/unit
Drain Current (pulse)	$I_{D(pulse)*}$	$\pm 6.0$	A/unit
Total Power Dissipation (4 circuits) < $T_c = 25^\circ\text{C}$ >	$P_{T1}$	28	W
Total Power Dissipation (4 circuits) < $T_a = 25^\circ\text{C}$ >	$P_{T2}$	3.5	W
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

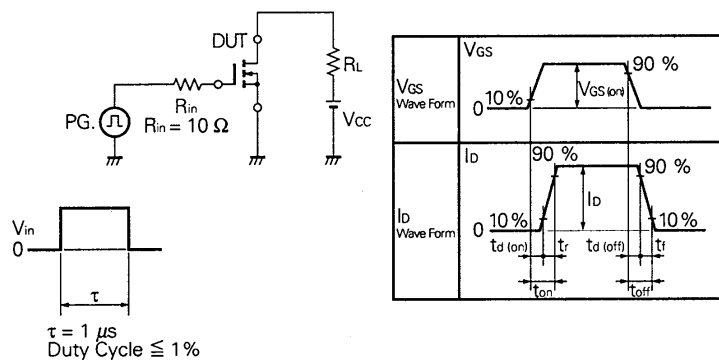
\*  $PW \leq 300 \mu\text{s}$ , Duty Cycle  $\leq 10\%$



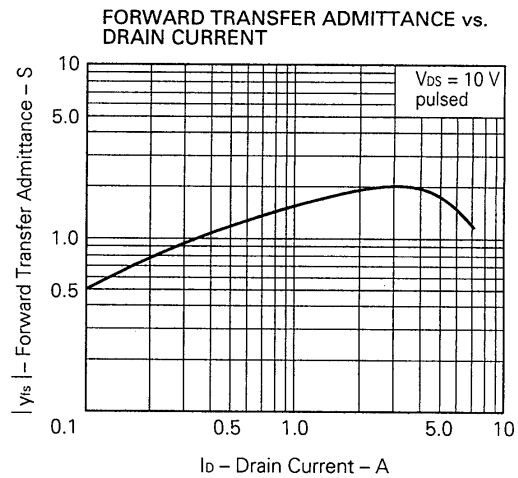
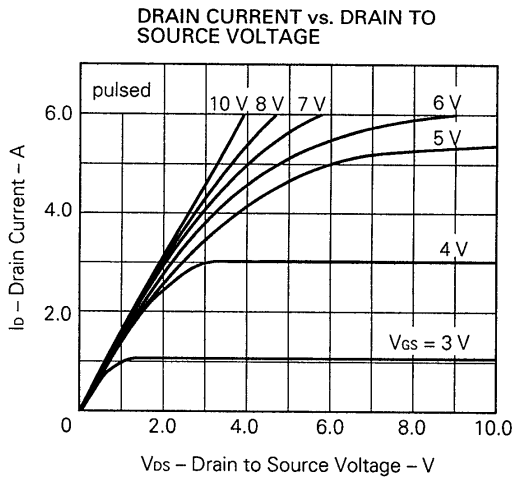
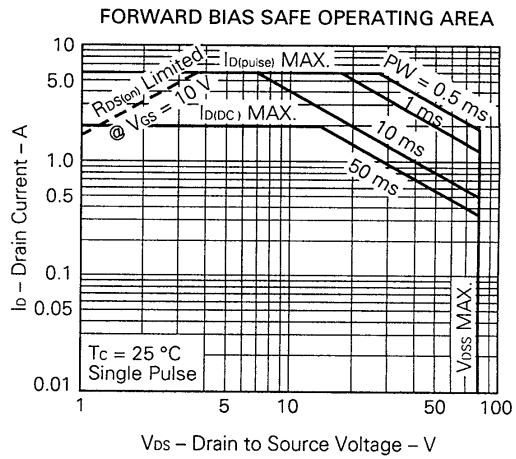
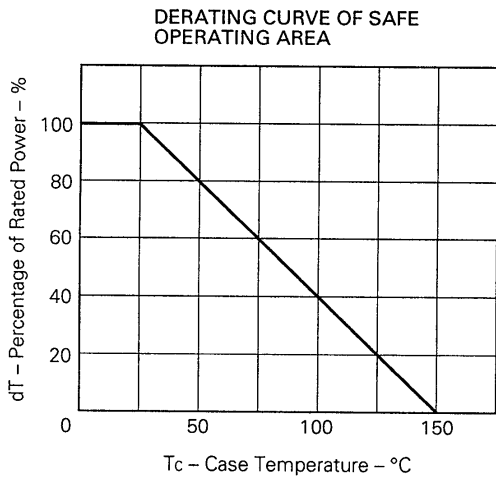
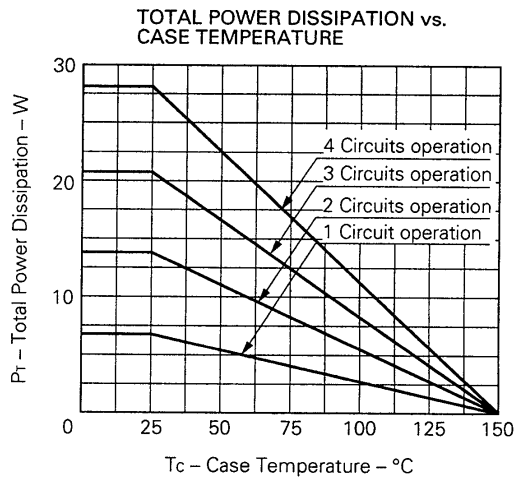
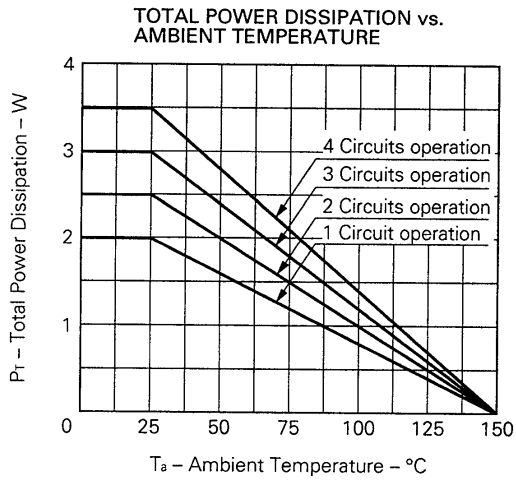
**ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C)**

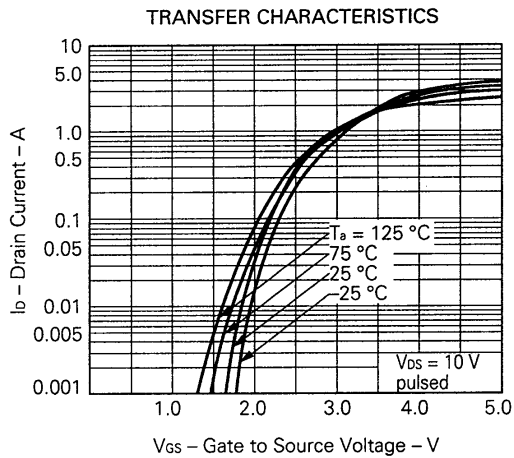
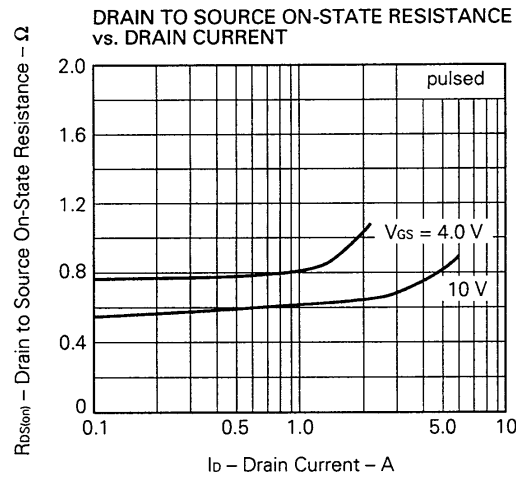
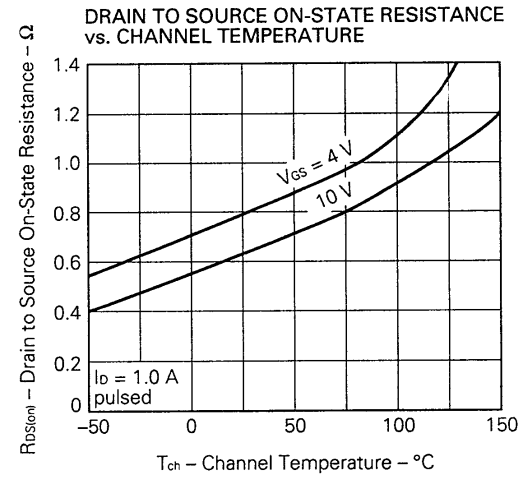
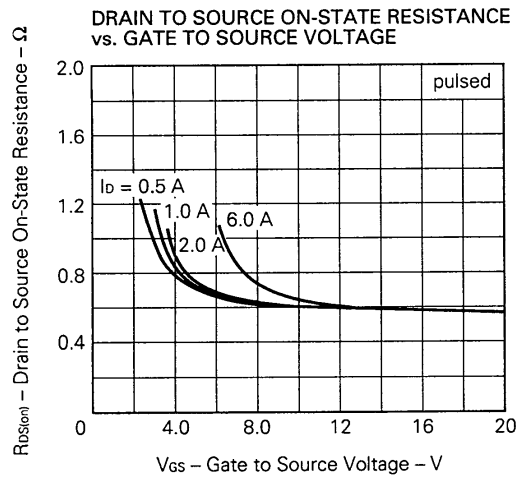
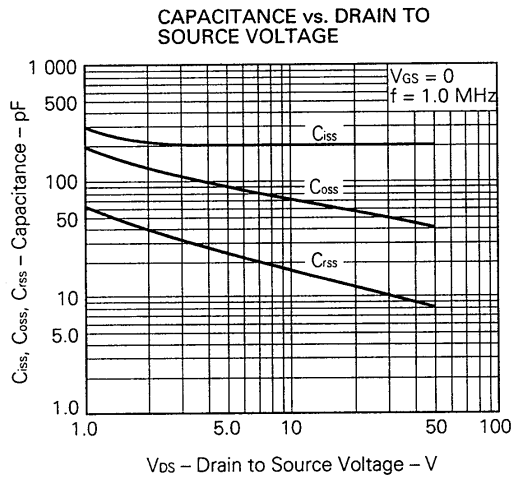
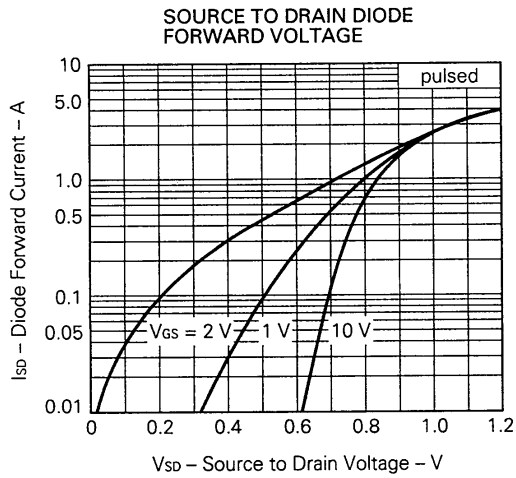
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain Leakage Current	I <sub>DSS</sub>			10	μA	V <sub>DS</sub> = 80 V, V <sub>GS</sub> = 0
Gate to Source Leakage Current	I <sub>GSS</sub>			±100	nA	V <sub>GS</sub> = ±20 V, V <sub>DS</sub> = 0
Gate to Source Cutoff Voltage	V <sub>GS(off)</sub>	1.0		2.5	V	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 1 mA
Forward Transfer Admittance	y <sub>fs</sub>	1.0			S	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 1 A
Drain to Source On-state Resistance	R <sub>DS(on)1</sub>		0.6	0.8	Ω	V <sub>GS</sub> = 10 V, I <sub>D</sub> = 1 A
Drain to Source On-state Resistance	R <sub>DS(on)2</sub>		0.8	1.0	Ω	V <sub>GS</sub> = 4 V, I <sub>D</sub> = 1 A
Input Capacitance	C <sub>iss</sub>		200		pF	V <sub>DS</sub> = 10 V V <sub>GS</sub> = 0 f = 1.0 MHz
Output Capacitance	C <sub>oss</sub>		70		pF	
Reverse Transfer Capacitance	C <sub>rss</sub>		15		pF	
Turn-On Delay Time	t <sub>d(on)</sub>		45		ns	I <sub>D</sub> = 1 A V <sub>GS</sub> = 10 V V <sub>CC</sub> = 50 V R <sub>L</sub> = 50 Ω R <sub>in</sub> = 10 Ω See Fig. 1
Rise Time	t <sub>r</sub>		40		ns	
Turn-Off Delay Time	t <sub>d(off)</sub>		450		ns	
Fall Time	t <sub>f</sub>		110		ns	

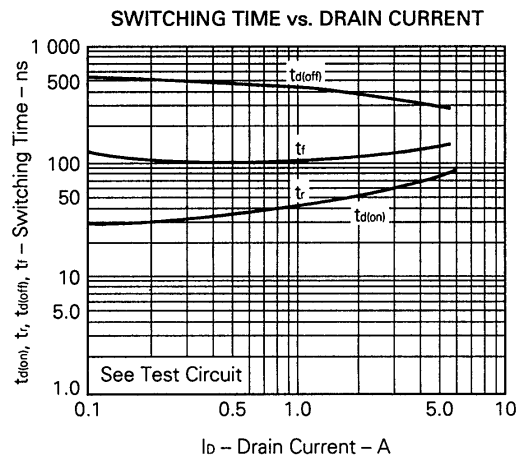
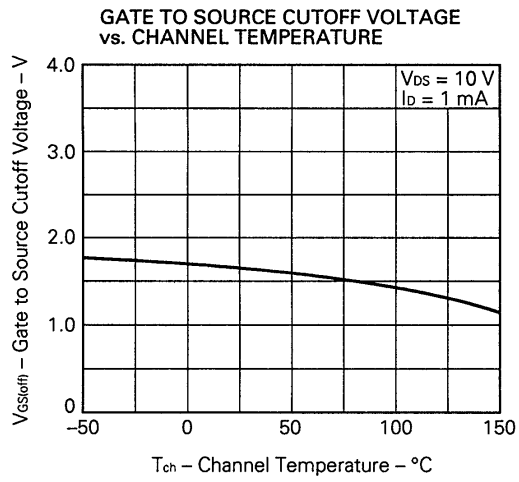
**Fig. 1 Switching Test Circuit**



TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )







**Reference**

Application note name	No.
Quality control of NEC semiconductors devices.	TEI-1202
Quality control guide of semiconductors devices.	MEI-1202
Assembly manual of semiconductors devices.	IEI-1207
Safe operating area of Power MOS FET	TEA-1034
Application circuit using Power MOS FET	TEB-1035

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Application examples recommended by NEC Corporation.

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Special: Automotive and Transportation equipment, Traffic control systems, Antidisaster systems, Anticrime systems, etc.

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