

μ PA2562T1H

MOS FIELD EFFECT TRANSISTOR

R07DS0007EJ0100
Rev.1.00
Jul 08, 2010

Description

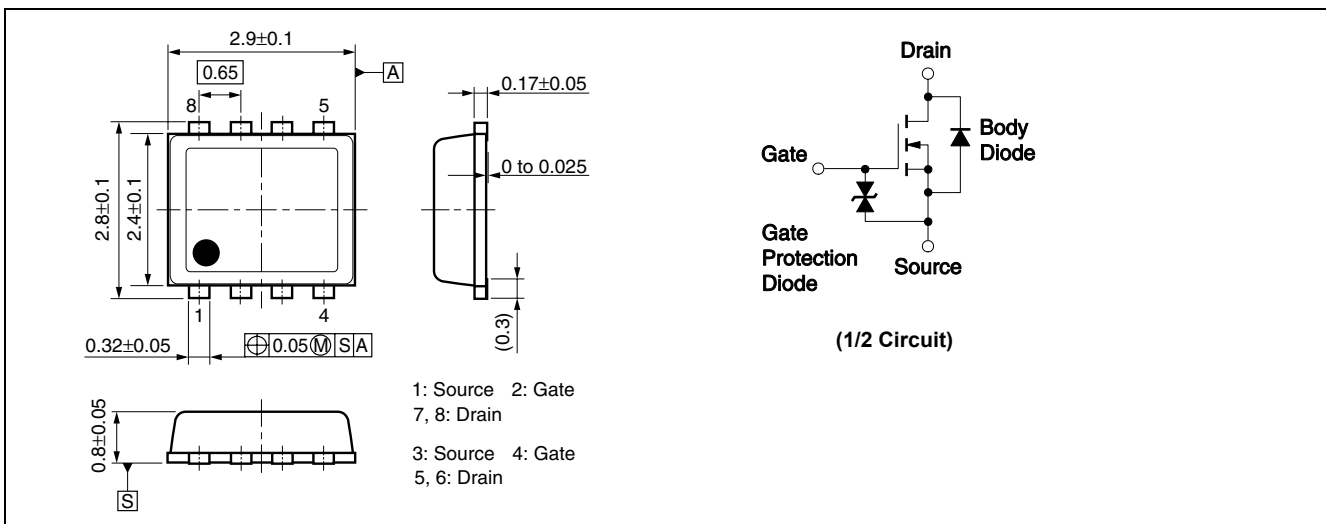
The μ PA2562 is Dual N-channel MOSFETs designed for back light inverters and power management applications of portable equipments. Dual N-channel MOSFETs are assembled in one package, to contribute minimize the equipments.

Features

- 2.5 V drive available
- Low on-state resistance
 - $R_{DS(on)1} = 55 \text{ m}\Omega \text{ MAX.}$ ($V_{GS} = 4.5 \text{ V}, I_D = 2 \text{ A}$)
 - $R_{DS(on)2} = 70 \text{ m}\Omega \text{ MAX.}$ ($V_{GS} = 2.5 \text{ V}, I_D = 2 \text{ A}$)

Package Drawing (Unit: mm)

Equivalent Circuit



Ordering Information

Part No.	Lead Plating	Packing	Package
μ PA2562T1H-T1-AT ^{Note}	Pure Sn	8 mm Embossed Taping	8-pin VSOE (2429)
μ PA2562T1H-T2-AT ^{Note}		3000 p/reel	

Note: This product does not contain Pb in external electrode and other parts.

Marking: 2562

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit
Drain to Source Voltage ($V_{GS} = 0 \text{ V}$)	V_{DSS}	30	V
Gate to Source Voltage ($V_{DS} = 0 \text{ V}$)	V_{GSS}	± 12	V
Drain Current (DC)	$I_{D(DC)}$	± 4.5	A
Drain Current (pulse) ^{Note1}	$I_{D(pulse)}$	± 18	A
Total Power Dissipation (1 unit, 5s) ^{Note2}	P_{T1}	1.5	W
Total Power Dissipation (2 unit, 5s) ^{Note2}	P_{T2}	2.2	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^\circ\text{C}$

Notes 1. $PW \leq 10 \mu\text{ s}$, Duty Cycle $\leq 1\%$

2. Mounted on FR-4 board of 25.4 mm x 25.4 mm x 0.8 mm

Remark The diode connected between the gate and source of the transistor serves as a protector against ESD.
 When this device actually used, an additional protection circuit is externally required if a voltage exceeding the rated voltage may be applied to this device.

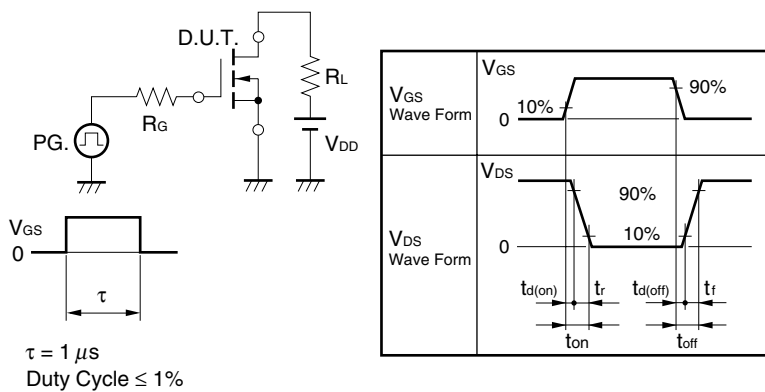
Caution This product is electrostatic-sensitive device due to low ESD capability and should be handled with caution for electrostatic discharge.

Electrical Characteristics (T_A = 25°C)

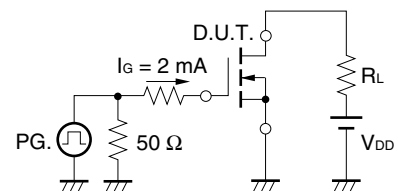
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero Gate Voltage Drain Current	I _{DSS}			1	μA	V _{DS} = 30 V, V _{GS} = 0 V
Gate Leakage Current	I _{GSS}			±10	μA	V _{GS} = ±12 V, V _{DS} = 0 V
Gate to Source Cut-off Voltage	V _{GS(off)}	0.5		1.5	V	V _{DS} = 10 V, I _D = 1 mA
Forward Transfer Admittance ^{Note}	y _{fs}	1			S	V _{DS} = 10 V, I _D = 2 A
Drain to Source On-state Resistance ^{Note}	R _{DS(on)1}		38	55	mΩ	V _{GS} = 4.5 V, I _D = 2 A
	R _{DS(on)2}		48	70	mΩ	V _{GS} = 2.5 V, I _D = 2 A
Input Capacitance	C _{iss}		475		pF	V _{DS} = 10 V
Output Capacitance	C _{oss}		62		pF	V _{GS} = 0 V
Reverse Transfer Capacitance	C _{rss}		34		pF	f = 1.0 MHz
Turn-on Delay Time	t _{d(on)}		7.0		ns	V _{DD} = 15 V, I _D = 2 A, V _{GS} = 4.5 V, R _G = 6 Ω
Rise Time	t _r		6.0		ns	
Turn-off Delay Time	t _{d(off)}		22		ns	
Fall Time	t _f		5.0		ns	
Total Gate Charge	Q _G		5.4		nC	V _{DD} = 24 V, V _{GS} = 4.5 V, I _D = 4 A
Gate to Source Charge	Q _{GS}		0.8		nC	
Gate to Drain Charge	Q _{GD}		1.5		nC	
Diode Forward Voltage ^{Note}	V _{F(S-D)}		0.85		V	I _F = 4 A, V _{GS} = 0 V

Note: Pulsed

TEST CIRCUIT 1 SWITCHING TIME

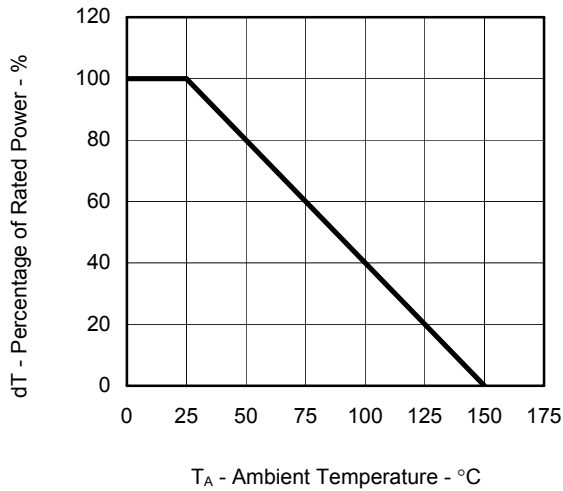


TEST CIRCUIT 2 GATE CHARGE

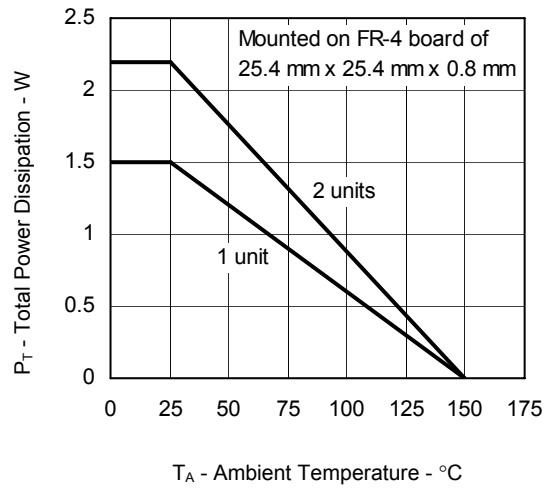


Typical Characteristics (T_A = 25°C)

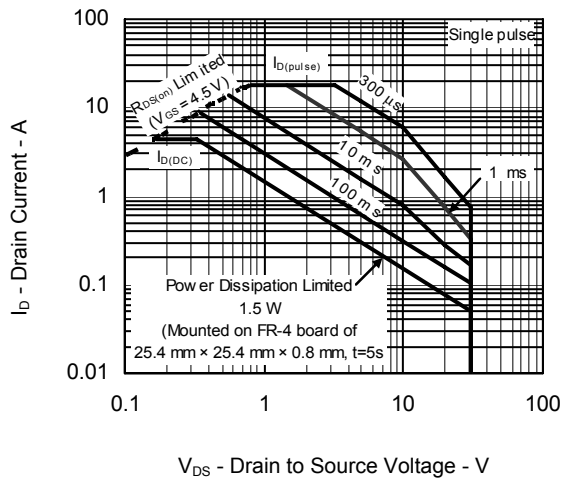
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



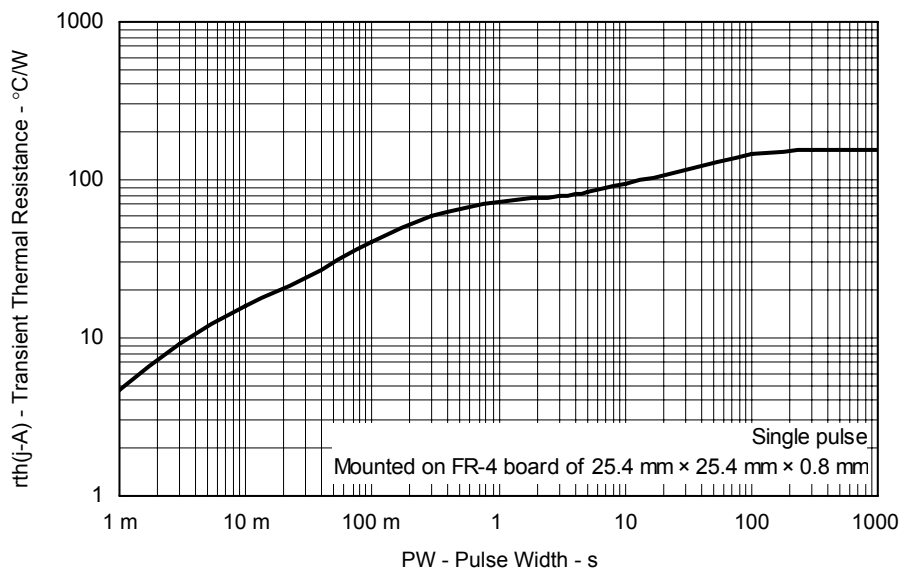
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



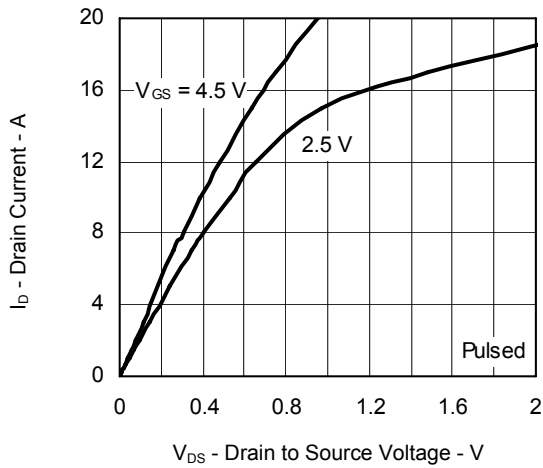
FORWARD BIAS SAFE OPERATING AREA



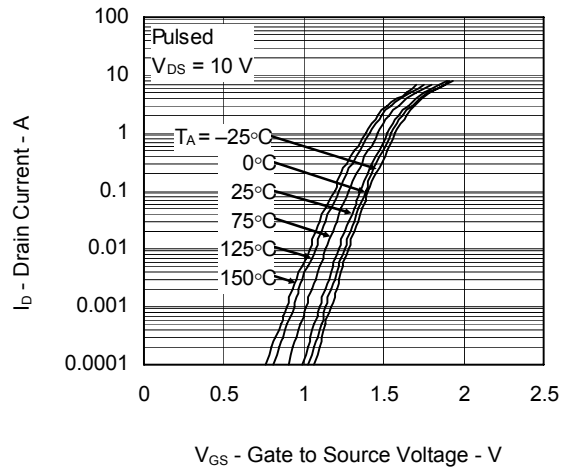
TRANSIENT THERMAL RESISTANCE vs. PULSE WIDTH



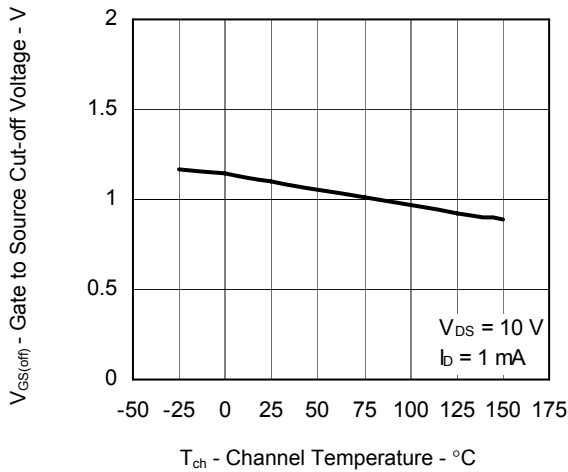
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



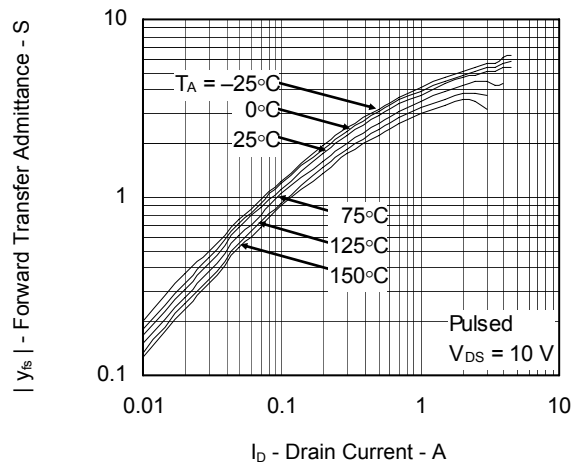
FORWARD TRANSFER CHARACTERISTICS



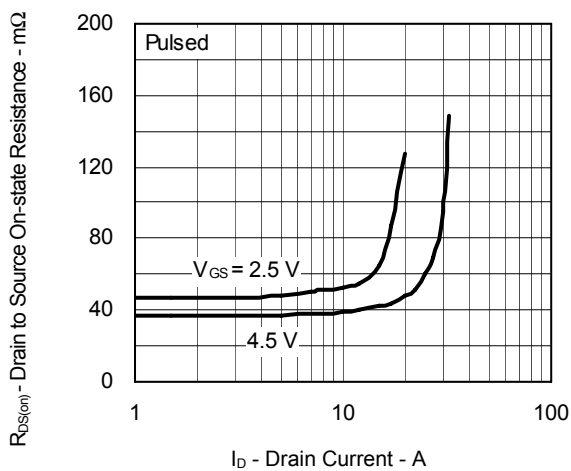
GATE TO SOURCE CUT-OFF VOLTAGE vs. CHANNEL TEMPERATURE



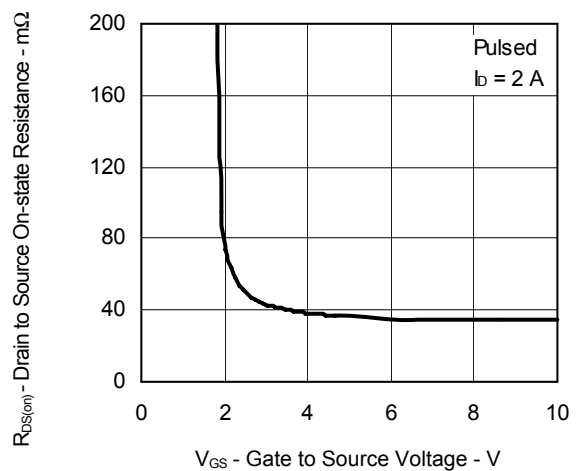
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



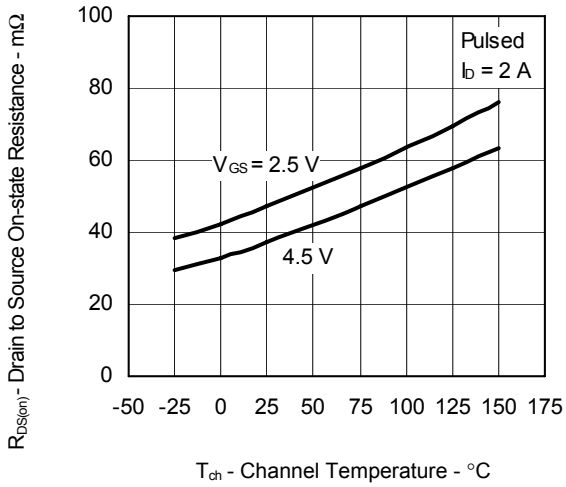
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



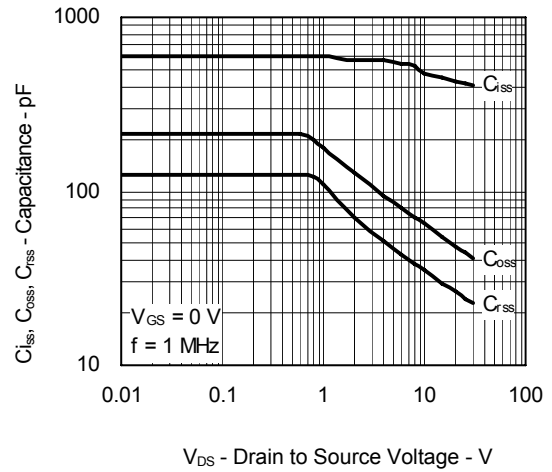
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



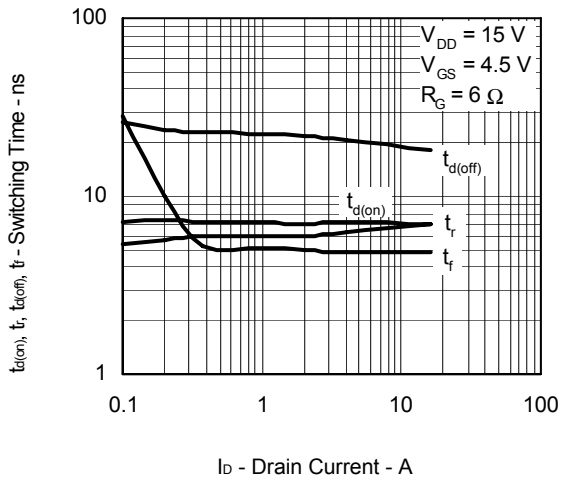
DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



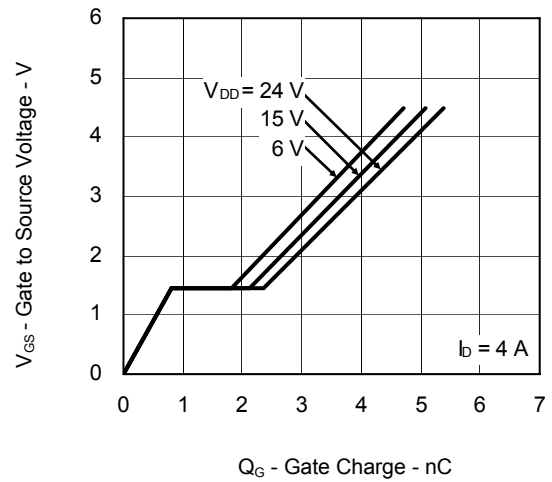
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



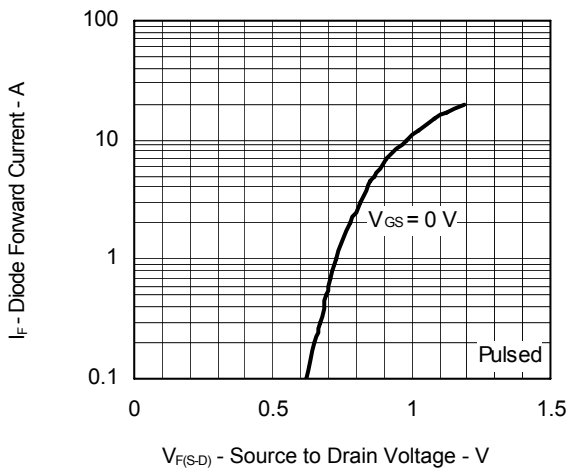
SWITCHING CHARACTERISTICS



DYNAMIC INPUT CHARACTERISTICS



SOURCE TO DRAIN DIODE FORWARD VOLTAGE



Revision History	μ PA2562T1H
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Rev.	Date	Description	
		Page	Summary
1.00	Jul 08, 2010	-	First Edition issued

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