Ordering number : ENA2227

PCP1302

P-Channel Power MOSFET –60V, –3A, 266mΩ, Single PCP

ON Semiconductor®

http://onsemi.com

Features

- On-resistance $R_{DS}(on)1$=200mΩ(typ.)
- 4V drive
- Halogen free compliance
- Protection Diode in

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Value	Unit
Drain to Source Voltage	V_{DSS}		–60	V
Gate to Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		–3	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–12	A
Power Dissipation	P_D	Tc=25°C	3.5	W
		When mounted on ceramic substrate (600mm^2×0.8mm)	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		– 55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to Case Steady State	$R_{\theta JC}$	35.7	°C /W
Junction to Ambient When mounted on ceramic substrate (600mm^2×0.8mm)	$R_{\theta JA}$	96.1	°C /W

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=–1mA, V_{GS}=0V	–60			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–60V, V_{GS}=0V			–1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V			±10	μA
Gate Threshold Voltage	$V_{GS}(th)$	V_{DS}=–10V, I_D=–1mA	–1.2		–2.6	V
Forward Transconductance	g_{FS}	V_{DS}=–10V, I_D=–1.5A		3.2		S
Static Drain to Source On-State Resistance	$R_{DS}(on)1$	I_D=–1.5A, V_{GS}=–10V		200	266	mΩ
	$R_{DS}(on)2$	I_D=–1A, V_{GS}=–4.5V		245	334	mΩ
	$R_{DS}(on)3$	I_D=–1A, V_{GS}=–4V		260	374	mΩ
Input Capacitance	Ciss	V_{DS}=–20V, f=1MHz		262		pF
Output Capacitance	Coss			29		pF
Reverse Transfer Capacitance	Crss			19		pF

Continued on next page.

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

Semiconductor Components Industries, LLC, 2014
June, 2014

61614 TKIM TC-00003133 No. A2227-1/5

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Continued from preceding page.

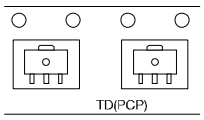
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		5.1		ns
Rise Time	t_{r}			6.0		ns
Turn-OFF Delay Time	t_{d}(off)			34		ns
Fall Time	t_{f}			21		ns
Total Gate Charge	Qg	V_{DS}=–30V, V_{GS}=–10V, I_{D}=–3A		6.4		nC
Gate to Source Charge	Qgs			0.8		nC
Gate to Drain “Miller” Charge	Qgd			1.4		nC
Forward Diode Voltage	V_{SD}	I_{S}=–3A, V_{GS}=0V		–0.9	–1.5	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

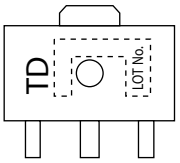
Ordering & Package Information

Device	Package	Shipping	note
PCP1302-TD-H	PCP, SC-62 SOT-89, TO-243	1,000 pcs. / reel	Pb-Free And Halogen Free

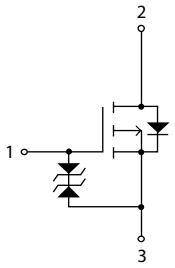
Packing Type:TD



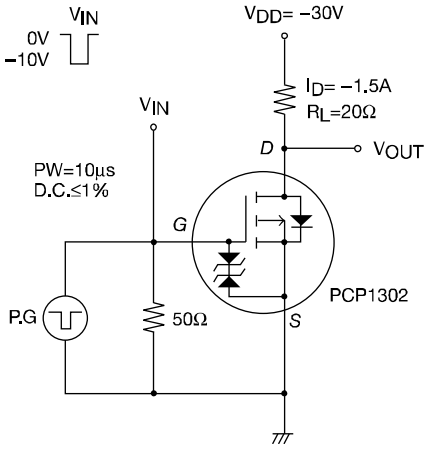
Marking



Electrical Connection



Switching Time Test Circuit



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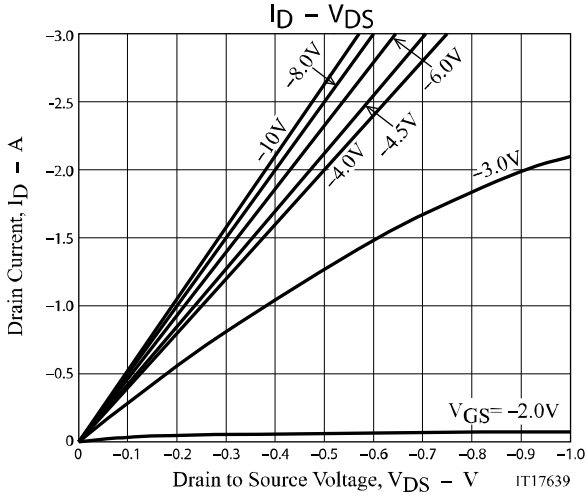

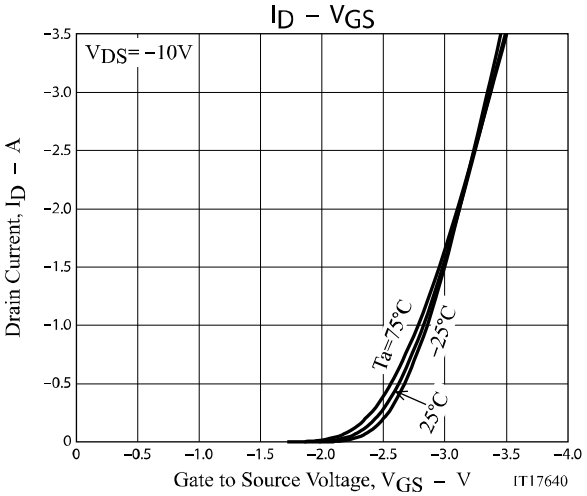

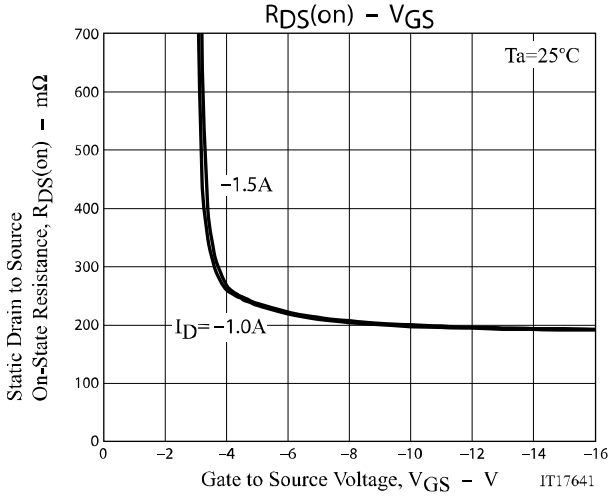

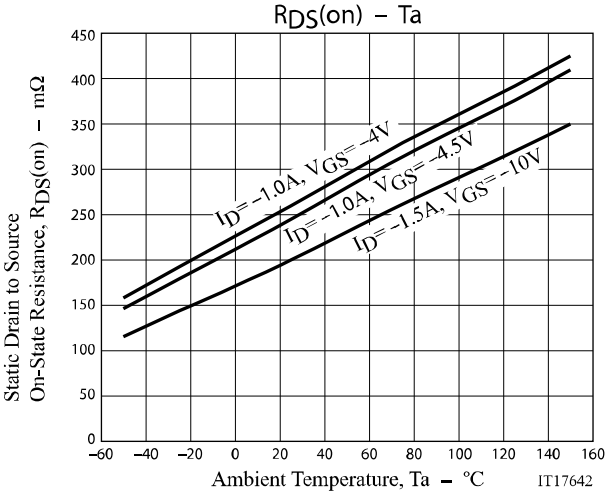

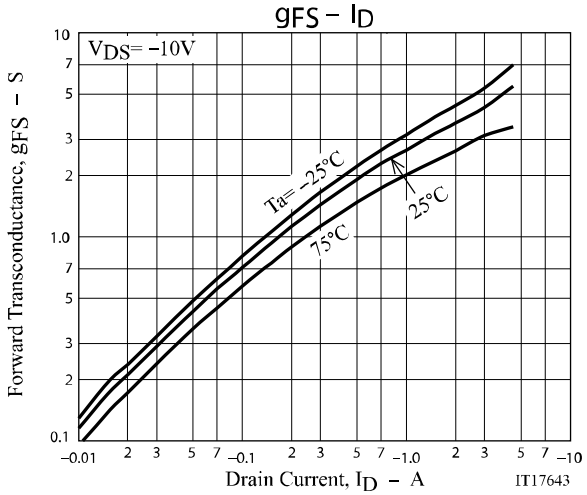

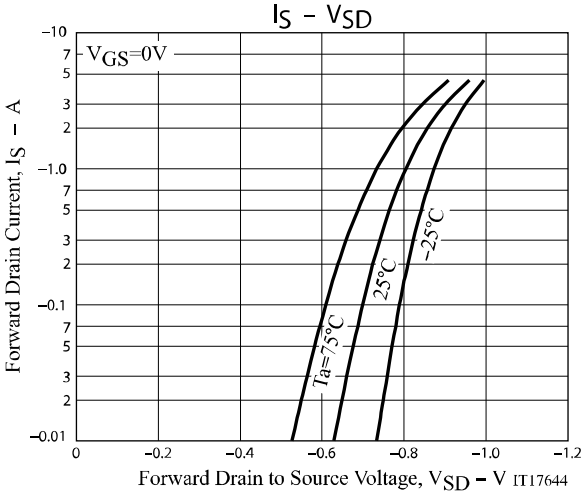

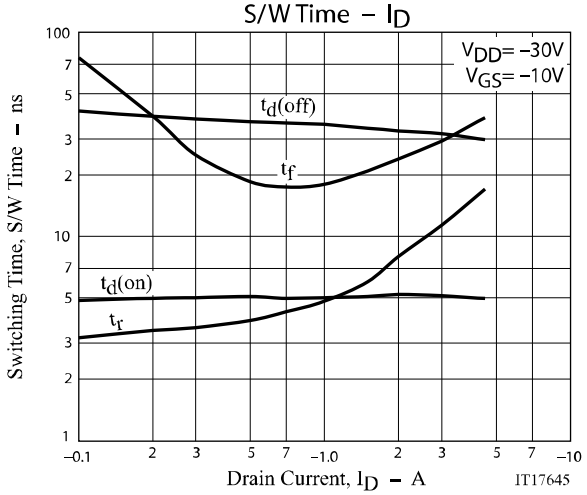

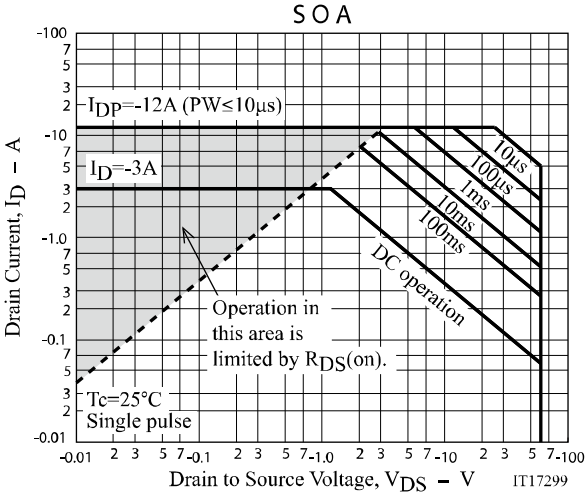

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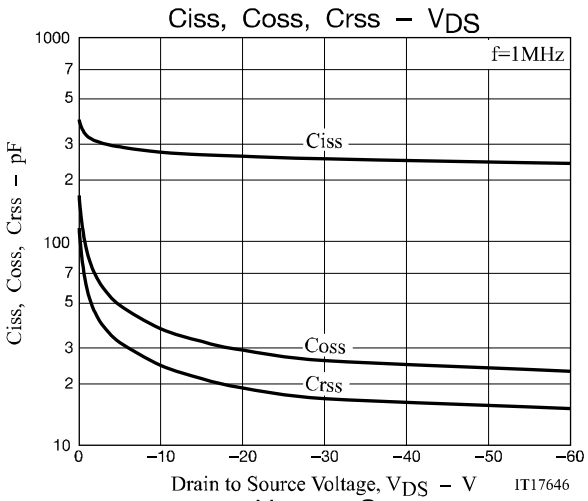

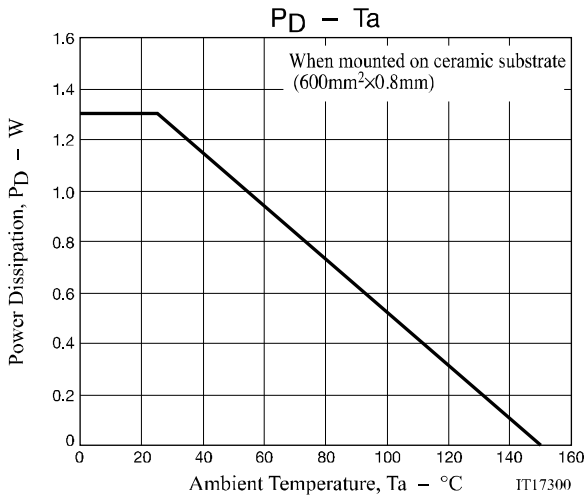

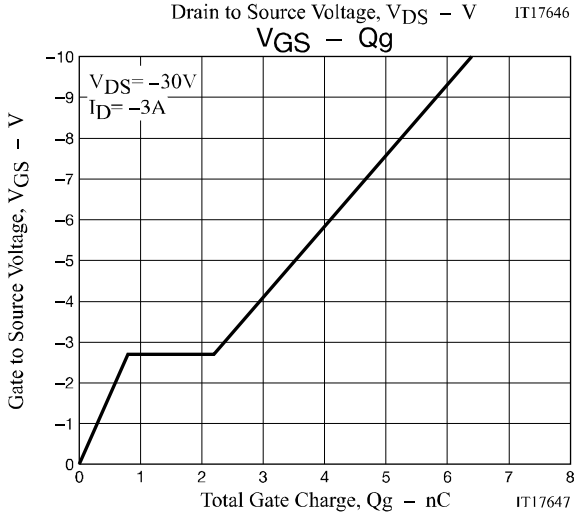

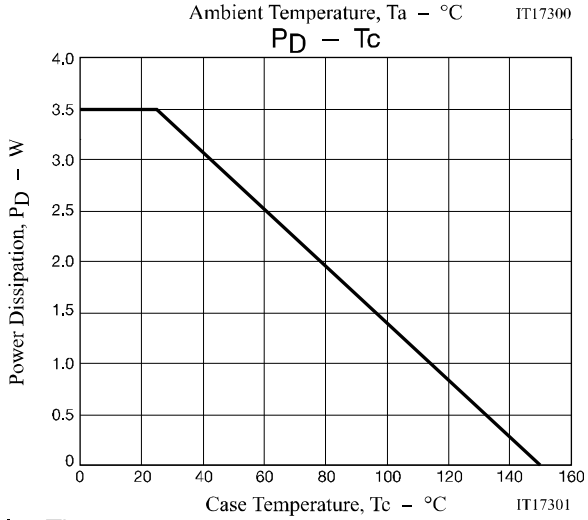

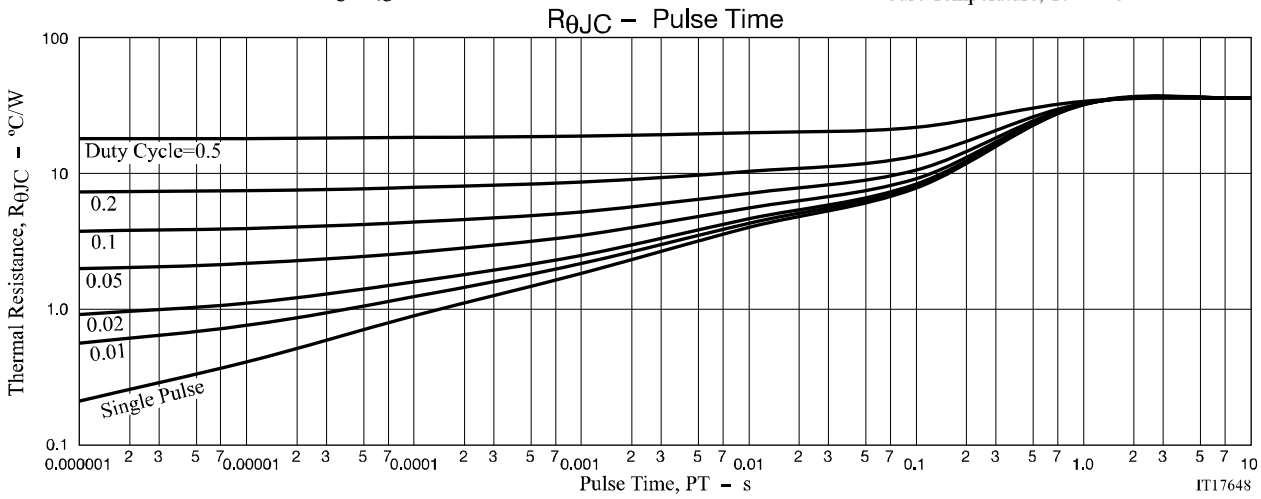

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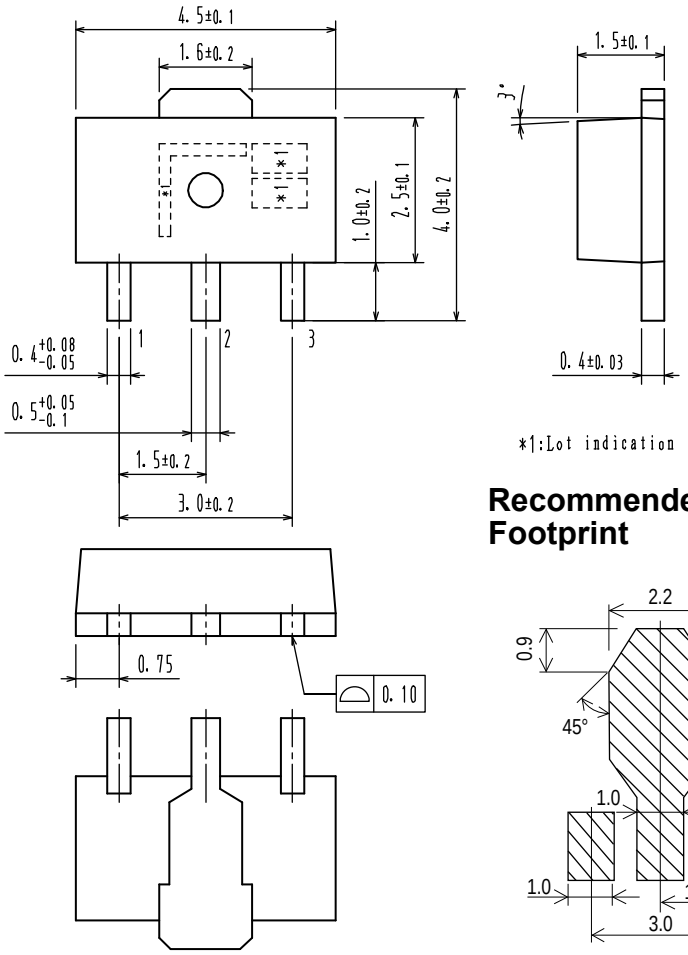
Package Dimensions

PCP1302-TD-H

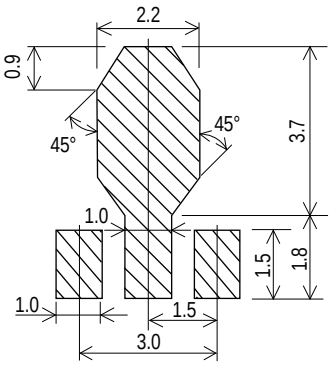
SOT-89/PCP-1

CASE 419AU
ISSUE O
Unit : mm

1: Gate
2: Drain
3: Source



Recommended Soldering Footprint



Note on usage : Since the PCP1302 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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