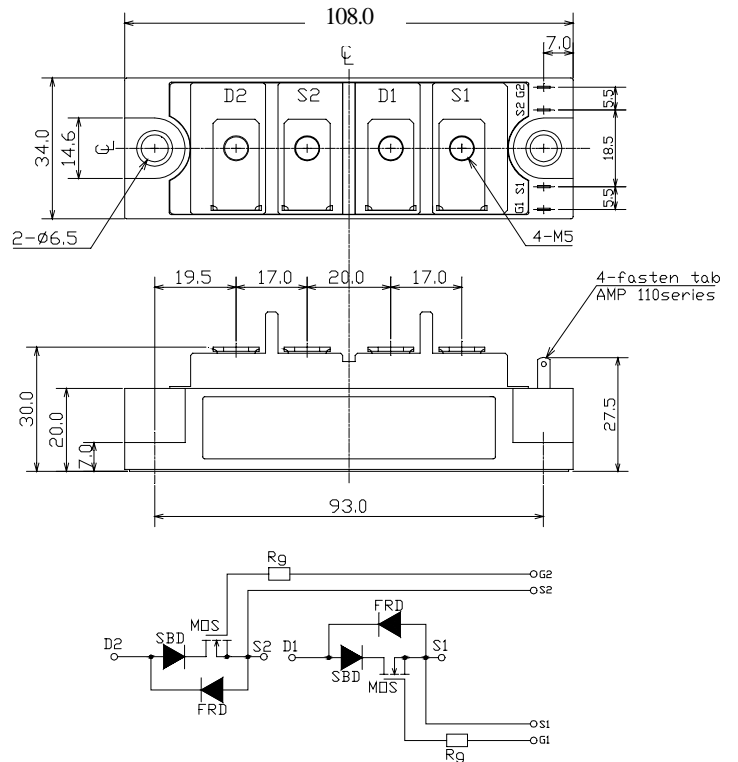
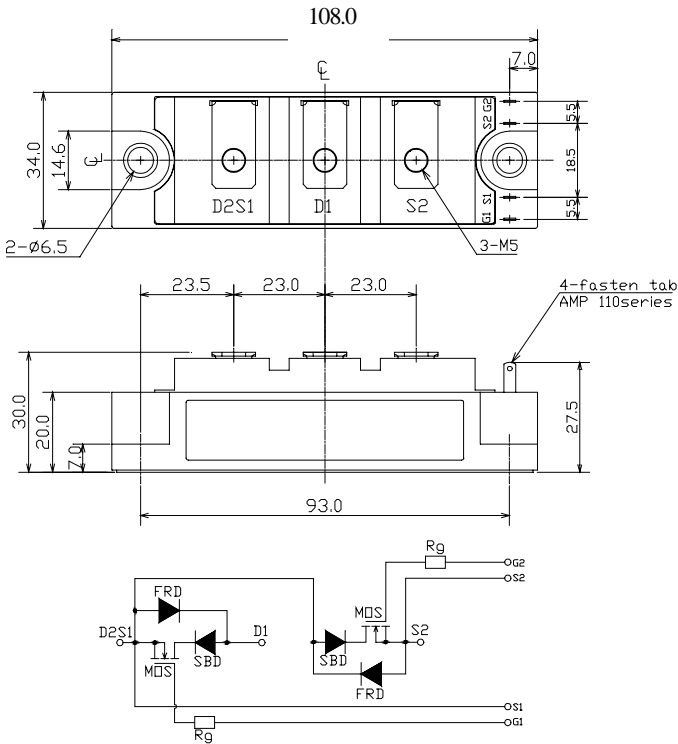


**MOSFET 30A 450~500V**

PD4M441H PD4M440H  
P2H4M441H P2H4M440H

**PD4M441H/440H**

**P2H4M441H/440H**



質量 Approximate Weight :220g

質量 Approximate Weight :220g

**最大定格 Maximum Ratings**

項目 Rating	目	記号 Symbol	耐圧・クラス Grade		単位 Unit
			PD4M441H/P2H4M441H	PD4M440H/P2H4M440H	
ドレイン・ソース間電圧 Drain-Source Voltage		$V_{DSS}$	450	500	V
			$V_{GS}=0V$		
ゲート・ソース間電圧 Gate-Source Voltage		$V_{GSS}$	± 20		V
ドレイン電流 (連続) Continuous Drain Current	Duty=50%	$I_D$	30 ( $T_c=25$ )		A
	D.C.		21 ( $T_c=25$ )		
パルスドレイン電流 Pulsed Drain Current		$I_{DM}$	60 ( $T_c=25$ )		A
全損失 Total Power Dissipation		$P_D$	230 ( $T_c=25$ )		W
動作接合温度範囲 Operating Junction Temperature Range		$T_{jw}$	- 40 ~ +150		
保存温度範囲 Storage Temperature Range		$T_{stg}$	- 40 ~ +125		
絶縁耐圧 RMS Isolation Voltage		$V_{iso}$	2000		V
			端子 - ベース間, AC1 分間 Terminals to Base, AC 1 min.		
締付トルク Mounting Torque		$F_{tor}$	3.0 ( 本体取付 Module Base to Heat sink )		N・m
			2.0 ( ネジ端子部 Bus bar to Main Terminals )		

## 電気的特性 Electrical Characteristics ( @Tc = 25 unless otherwise noted )

項目 Characteristic	記号 Symbol	条件 Condition	特性値(最大) Maximum Value			単位 Unit
			最小 Min.	標準 Typ.	最大 Max.	
ドレイン遮断電流 Zero Gate Voltage Drain Current	IDSS	VDS = VDSS, VGS = 0V			1	mA
		TJ = 125, VDS = VDSS, VGS = 0V			4	
ゲート・ソース間しきい値電圧 Gate-Source Threshold Voltage	VGS(th)	VDS = VGS, ID = 1mA	2	3.2	4	V
ゲート・ソース間漏れ電流 Gate-Source Leakage Current	IGSS	VGS = ±20V, VDS = 0V			1	μA
ドレイン・ソース間オン抵抗 (MOSFET部) Static Drain-Source On-Resistance	rDS(on)	VGS = 10V, ID = 15A		190	210	m
ドレイン・ソース間オン電圧 Drain-Source On-Voltage	VDS(on)	VGS = 10V, ID = 15A		3.3	3.5	V
順伝達コンダクタンス Forward Transconductance	gfg	VDS = 15V, ID = 15A		27		S
入力容量 Input Capacitance	Ciss			5.2		nF
出力容量 Output Capacitance	Coss	VGS = 0V VDS = 25V f = 1MHz		1.1		nF
帰還容量 Reverse Transfer Capacitance	Crss			0.18		nF
ターン・オン遅延時間 Turn-On Delay Time	tD(on)			100		ns
上昇時間 Rise Time	tr	VDD = 1/2VDSS ID = 15A		60		ns
ターン・オン遅延時間 Turn-Off Delay Time	tD(off)	VGS = -5V, +10V RG = 7		180		ns
下降時間 Fall Time	tf			50		ns

## 内部ダイオード定格・特性 Source-Drain Diode Ratings and Characteristics ( @Tc = 25 unless otherwise noted )

項目 Characteristic	記号 Symbol	条件 Condition	特性値(最大) Maximum Value			単位 Unit
			最小 Min.	標準 Typ.	最大 Max.	
ソース電流 (連続) Continuous Source Current	IS	D. C.			21	A
パルスソース電流 Pulsed Source Current	ISM				60	A
ダイオード順電圧 Diode Forward Voltage	VSD	IS = 30A			1.8	V
逆回復時間 Reverse Recovery Time	trr	IS = 30A		100		ns
逆回復電荷 Reverse Recovery Charge	Qr	- dis/dt = 100A/μs		0.15		μC

## 熱抵抗特性 Thermal Characteristics

項目 Characteristic	記号 Symbol	条件 Condition	特性値(最大) Maximum Value			単位 Unit
			最小 Min.	標準 Typ.	最大 Max.	
熱抵抗 (接合部 - ケース間) Thermal Resistance, Junction to Case	Rth(j-c)	MOSFET			0.56	/W
		Diode			2.0	
接触熱抵抗 (ケース - 冷却フィン間) Thermal Resistance, Case to Heatsink	Rth(c-f)	サーマルコンパウンド塗布 Mounting surface flat, smooth, and greased			0.1	

定格・特性曲线

Fig. 1 Typical Output Characteristics

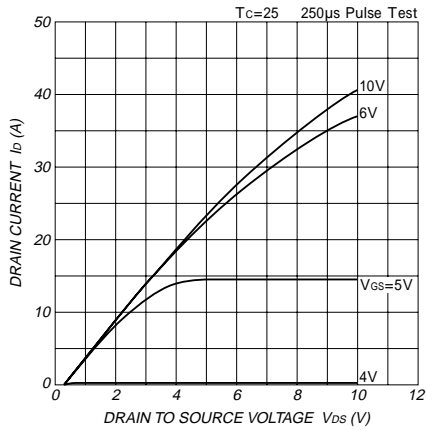


Fig. 4 Typical Capacitance Vs. Drain-Source Voltage

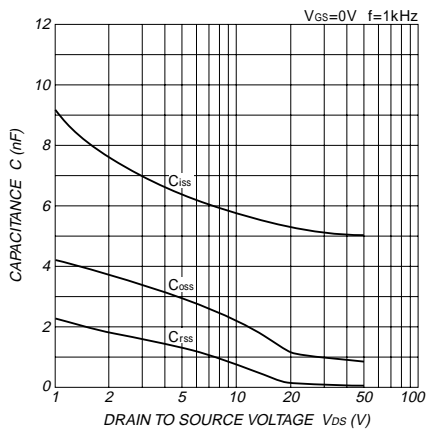


Fig. 7 Typical Switching Time Vs. Drain Current

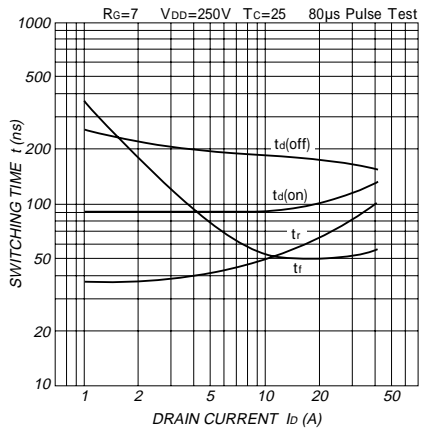


Fig. 10 Maximum Safe Operating Area

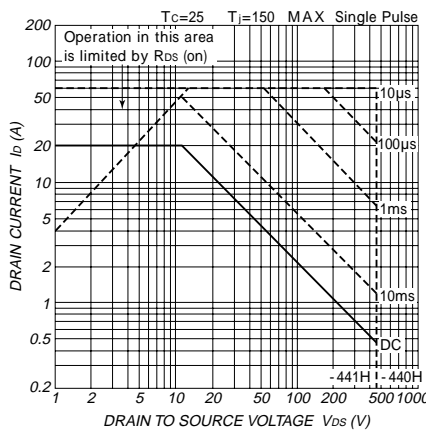


Fig. 2 Typical Drain-Source On-Voltage Vs. Gate-Source Voltage

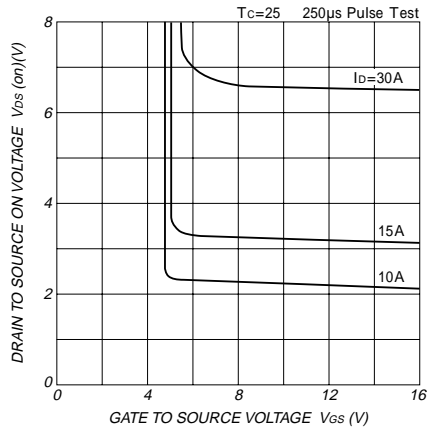


Fig. 5 Typical Gate Charge Vs. Gate-Source Voltage

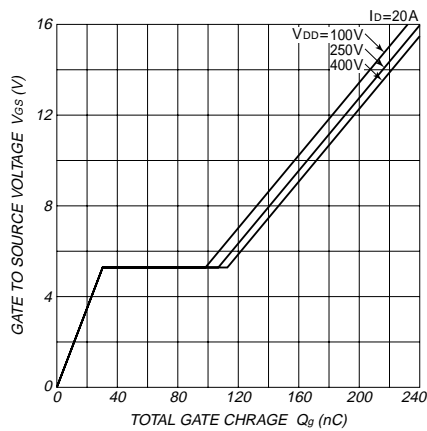


Fig. 8 Typical Source-Drain Diode Forward Characteristics

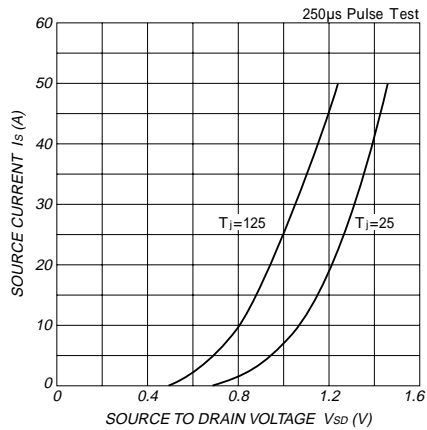


Fig. 11-1 Normalized Transient Thermal Impedance (MOSFET)

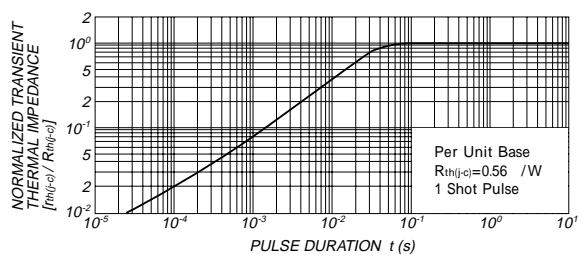


Fig. 11-2 Normalized Transient Thermal Impedance (DIODE)

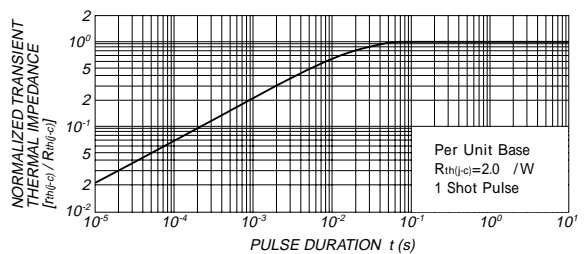


Fig. 3 Typical Drain-Source On Voltage Vs. Junction Temperature

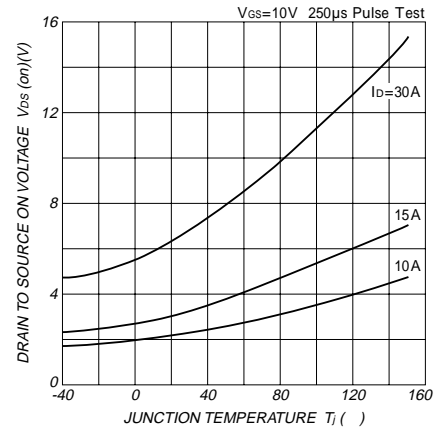


Fig. 6 Typical Switching Time Vs. Series Gate Impedance

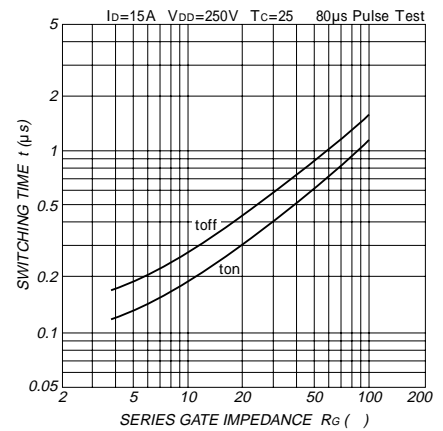


Fig. 9 Typical Reverse Recovery Characteristics

