



HY55P30

P-CHANNEL POWER MOSFET

-30A, -55V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The HY55P30A uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

FEATURES

- * High density cell design for ultra low $R_{DS(ON)}$
- * Fully characterized Avalanche voltage
- * Good stability and uniformity with high EAS
- * Excellent package for good heat dissipation

APPLICATIONS

- * Power switching application
- * Hard switched and high frequency circuits
- * Uninterruptible Power Supply(UPS)

MARKING

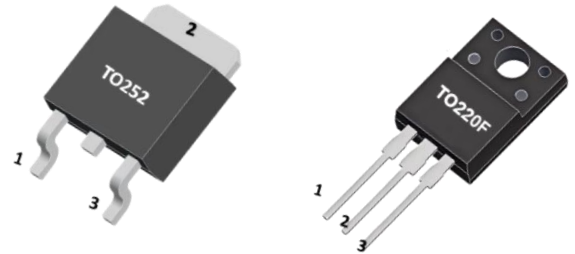


: HY LOGO

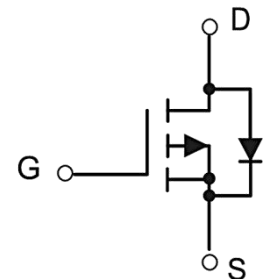
HY50P30A=Device Code

XXXX=Date Code

Solid Dot=Green molding compound



SYMBOL



ABSOLUTE MAXIMUM RATINGS(TA=25°C, unless otherwise specified.)

SYMBOL	PARAMETER		VALUE	UNIT
VDSS	Drain-Source Voltage		-55	V
VGSS	Gate Source Voltage		±20	V
ID	Continuous Drain Current		-30	A
IDM	Pulsed Drain Current		-120	A
EAS	Single Pulsed Avalanche Energy (Note 1)		225	mJ
PD	Maximum Power Dissipation	TO-220F	2	W
		TO-252	1.25	
RθJA	Thermal Resistance from Junction to Ambient	TO-220F	62.5	°C/W
		TO-252	100	
TJ	Storage Temperature		150	°C
TSTG	Thermal Resistance Fr .00m Junction To Ambient		-55~150	°C
TL	Lead Temperature for Soldering Purposes(1/8" from case for 10s)		260	°C

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

1.EAS condition: VDD=-25V,L=0.5mH, RG=25Ω, Starting TJ = 25°C



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■ ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BVDSS	VGS=0V, ID=-250μA	-55			V
Drain-Source Leakage Current	IDSS	VDS=-55V, VGS=0V			-1	μA
Gate- Source Leakage Current	IGSS	VGS= ± 20V, VDS=0V			± 100	nA
ON CHARACTERISTICS (Note 1)						
Gate Threshold Voltage	VGS(TH)	VDS=VGS , ID=-250μA	-2	-3	-4	V
Static Drain-Source On-State Resistance	RDS(ON)	VGS=-10V, ID=-15A		33	40	mΩ
Forward transconductance	gFS	VDS =-25V, ID =-16A	8			S
DYNAMIC CHARACTERISTICS (Note 2)						
Input Capacitance	CISS	VDS=-30V,VGS=0V f= 1.0MHz		3500		pF
Output Capacitance	COSS			240		pF
Reverse Transfer Capacitance	CRSS			153		pF
SWITCHING CHARACTERISTICS (Note 2)						
Total Gate Charge	QG	VDS=-30V, VGS= -10V ID=-15A		56		nC
Gate-Source Charge	QGS			11		nC
Gate-Drain Charge	QGD			24		nC
Turn-On Delay Time	tD(ON)	VDD=-30V,ID=- 15A,RG=3Ω VGS= -10V		12		ns
Turn-On Rise Time	tR			15		ns
Turn-Off Delay Time	tD(OFF)			38		ns
Turn-Off Fall Time	tF			15		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Continuous Drain-Source Diode Forward Current	IS				-30	A
Maximum Pulsed Drain-Source Diode Forward Current	ISM				-120	A
Drain-Source Diode Forward Voltage (Note 1)	VSD	TJ=25°C,IS=-18A,VGS=0V			-1.2	V

Notes:

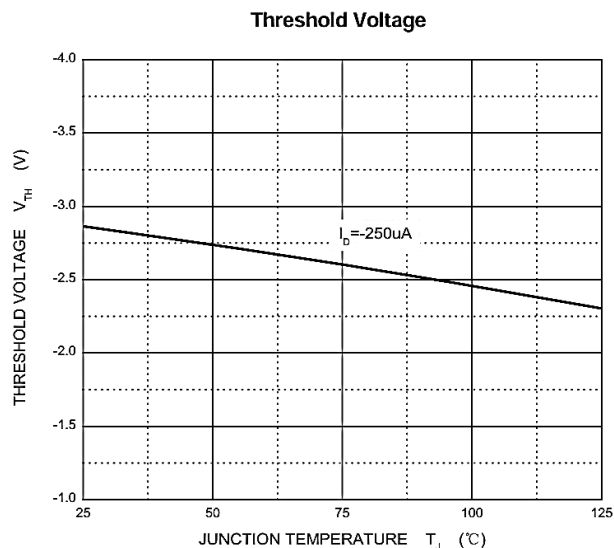
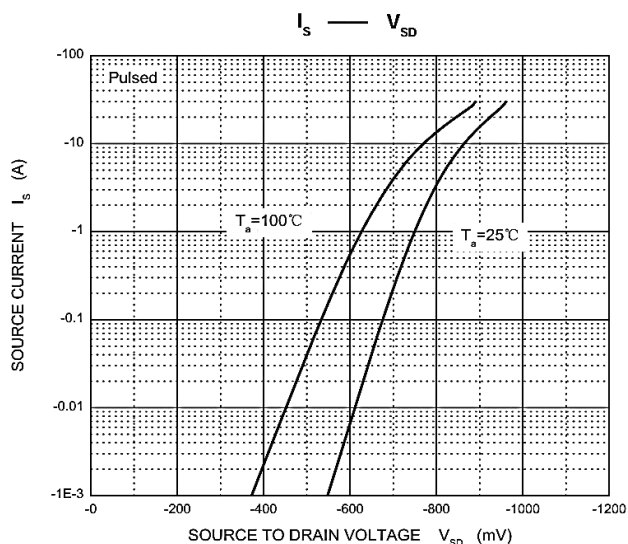
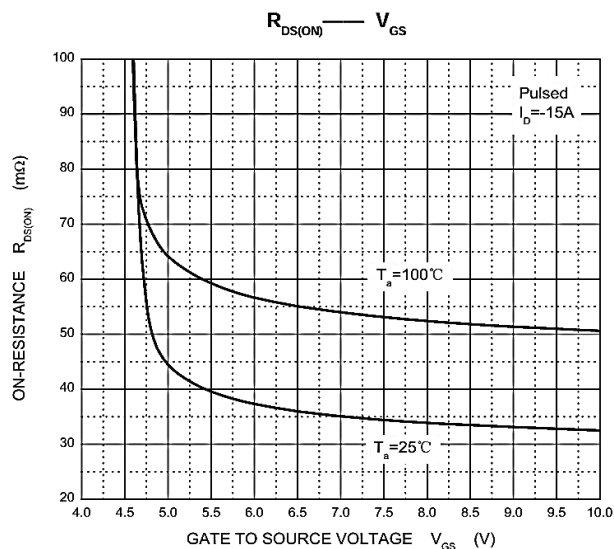
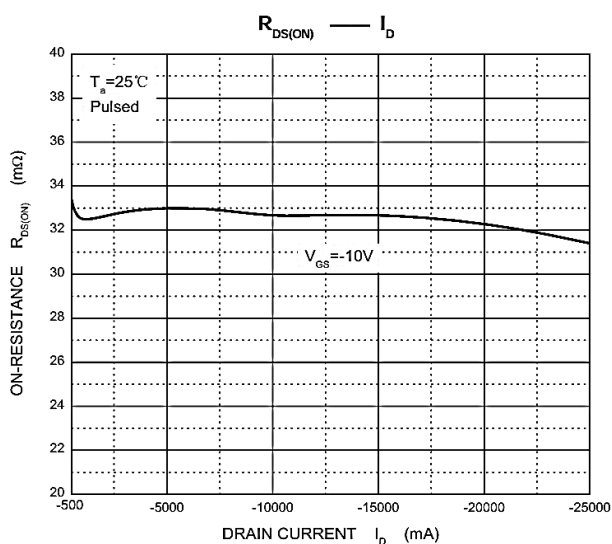
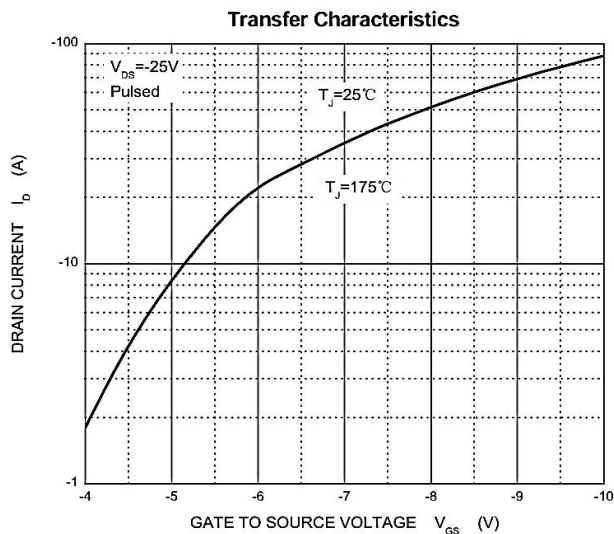
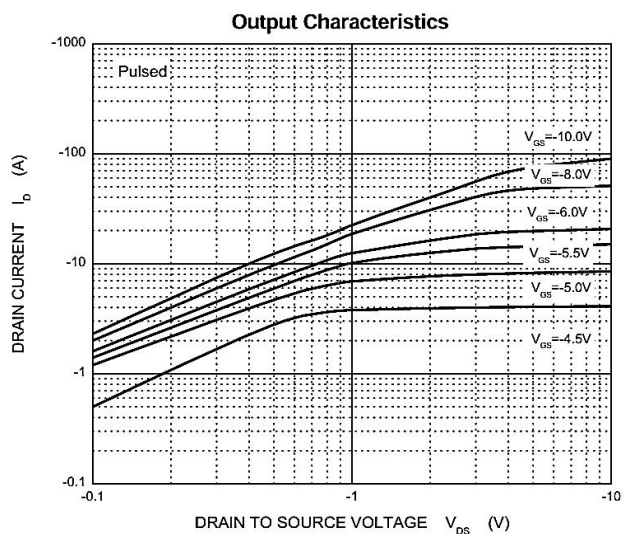
1. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
2. Guaranteed by design, not subject to production.



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■ TYPICAL CHARACTERISTICS

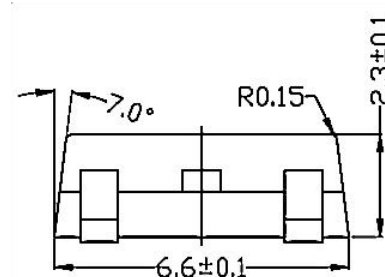
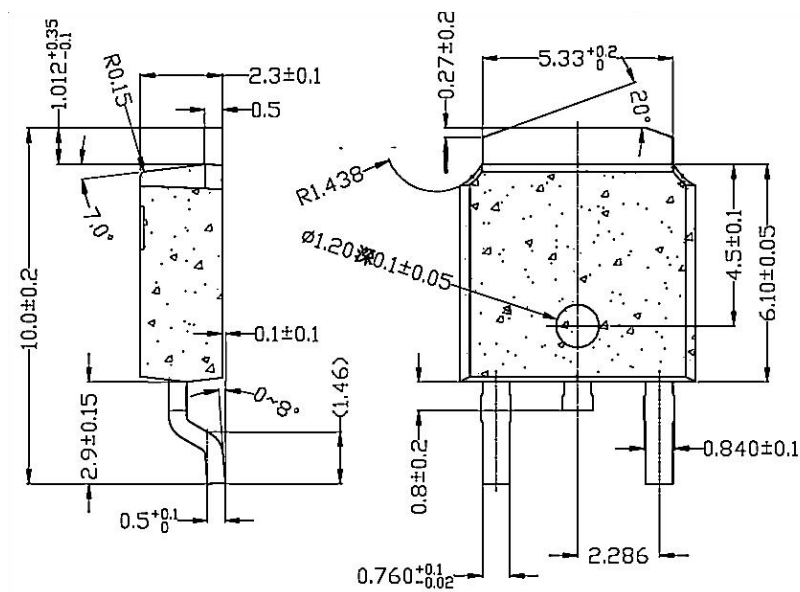




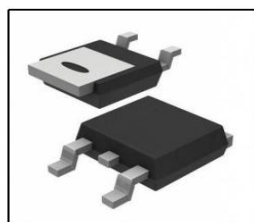
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P-CHANNEL POWER MOSFET

TO - 252 PACKAGE OUTLINE DIMENSIONS



TO - 252 PACKING INFORMATION



2500PC
S/reel



2 Reel/BOX



Outer box

5 Inner
Box



Inner box

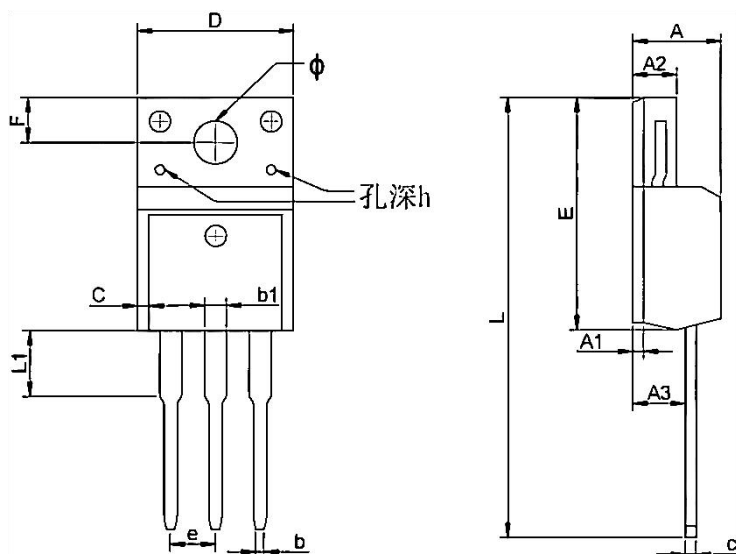
Package version	Reel dimensions $\Phi \times H$ (mm)	Per Reel (pcs)	Reels per box	Inner box dimensions $L \times W \times H$ (mm)	Outer box (pcs)	Outer box dimensions $L \times W \times H$ (mm)
TO-252	$\Phi 330 \times 20$	2500	2	360*340*50	25000	375*375*280



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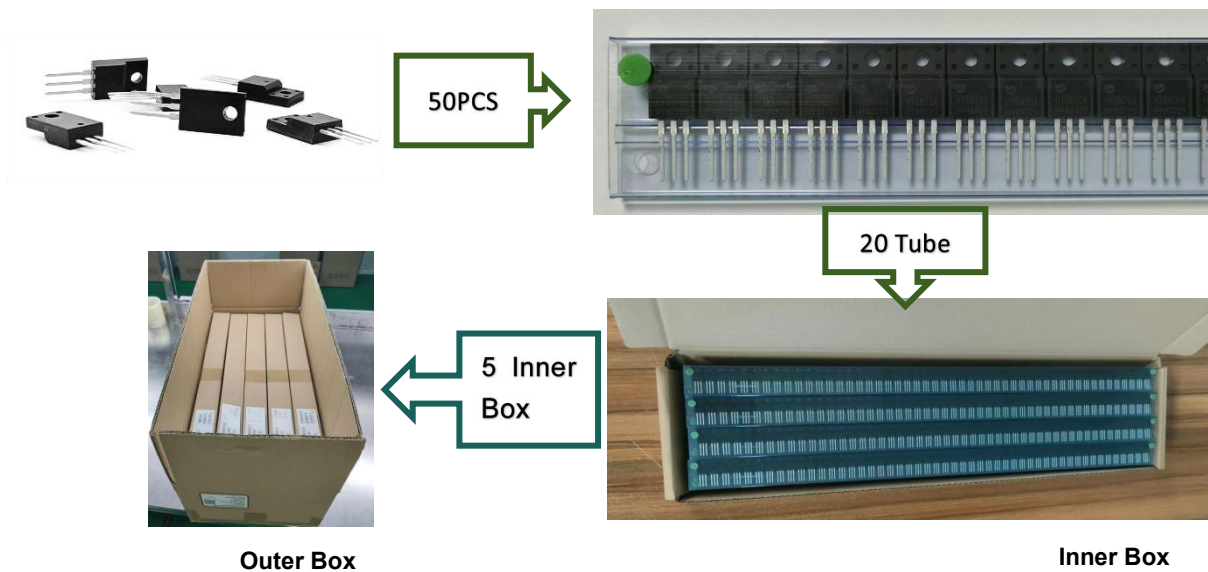
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TO-220F PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max	Min	Max
A	4.300	4.750	0.169	0.185
A1	1.830 REF		0.072 REF	
A2	2.300	2.850	0.090	0.112
A3	2.500	2.900	0.098	0.114
b	0.400	0.420	0.016	0.016
b1	1.220	1.280	0.048	0.050
C	0.690	0.720	0.027	0.028
c	0.490	0.510	0.019	0.020
D	9.960	10.200	0.392	0.400
E	15.000	15.950	0.588	0.625
e	2.574 TYP		0.101TYP	
F	3.470 REF		0.136 REF	
y	3.200 REF		0.125 REF	
h	0.000	0.300	0.000	0.012
L	28.780	28.900	1.128	1.133
L1	2.990	3.100	0.117	0.122

TO - 220F PACKING INFORMATION



Package version	Tube dimensions LxWxH (mm)	Per Tube (pcs)	Tube per box	Inner box dimensions LxWxH (mm)	PCS/ Inner box	Outer box dimensions LxWxH(mm)	PCS/ Outer box
TO-220F	530*32*7	50	20	580*155*50	1000	602*277*188	5000