

Features

- $R_{DS(ON)}$, $V_{GS}@10V, I_D@3.5A < 1.2\Omega$
- Fast switching capability
- Low gate charge
- Lead free in compliance with EU RoHS directive.
- Green molding compound

Mechanical Data

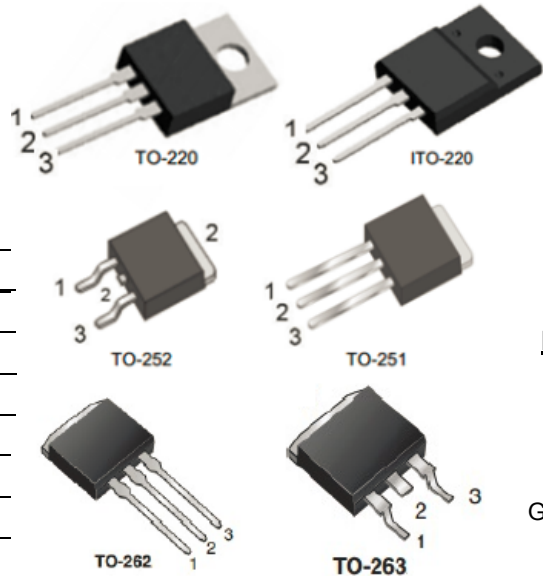
- Case: TO-251, TO-252, TO-220, ITO-220
TO-262, TO-263 Package

Ordering Information

Part No.	Package	Packing
DMP7N70L-TU	TO-251	75pcs / Tube
DMD7N70L-TR	TO-252	2.5Kpcs / 13" Reel
DMD7N70L-TU	TO-252	75pcs / Tube
DMT7N70L-TU	TO-220	50pcs / Tube
DMF7N70L-TU	ITO-220	50pcs / Tube
DMK7N70L-TU	TO-262	50pcs / Tube
DMG7N70L-TU	TO-263	50pcs / Tube
DMG7N70L-TR	TO-263	800pcs / 13" Reel

PRODUCT SUMMARY

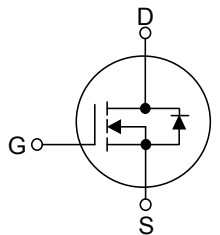
V_{DS} (V)	Current(A)	$R_{DS(on)}$ (Ω)
700	7	1.2 @ $V_{GS} = 10V$



Pin Definition:

1. Gate
2. Drain
3. Source

Block Diagram



ABSOLUTE MAXIMUM RATINGS ($T_C=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	700	V
Gate-Source Voltage	V_{GSS}	± 30	V
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	I_{DM}	28	A
Single Pulse Avalanche Energy ^(Note 1)	E_{AS}	40	mJ
Power Dissipation	TO-220/TO-262/TO-263	142	W
	ITO-220	48	W
	TO-251/TO-252	60	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-55 ~ +150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

NOTES :

1. $L=20\text{mH}$, $I_{AS}=2\text{A}$, $V_{DD}=50\text{V}$, $R_G=25\text{ohm}$, Starting $T_J=25^\circ\text{C}$
2. Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$
3. Essentially independent of operating temperature typical characteristics.
4. Guaranteed by design, not subject to production testing

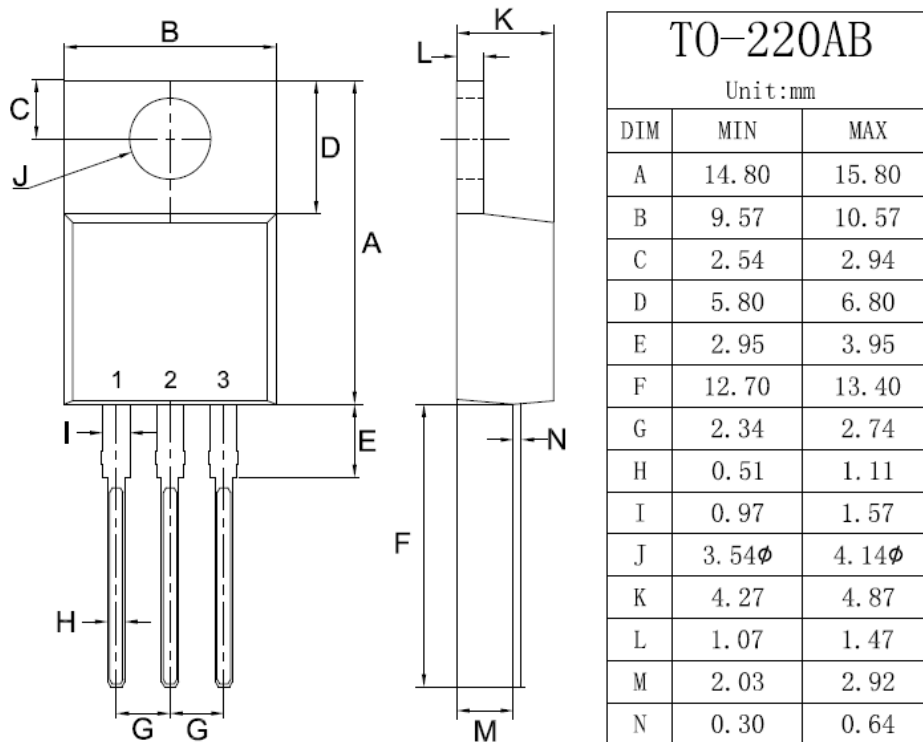
THERMAL DATA

PARAMETER		SYMBOL	RATING	UNIT
Junction to Ambient	TO-220/TO-262/TO-263 ITO-220	θ_{JA}	62.5	°C/W
	TO-251/TO-252		110	
Junction to Case	TO-220/TO-262/TO-263	θ_{JC}	0.9	°C/W
	ITO-220		2.6	
	TO-251/TO-252		2.1	

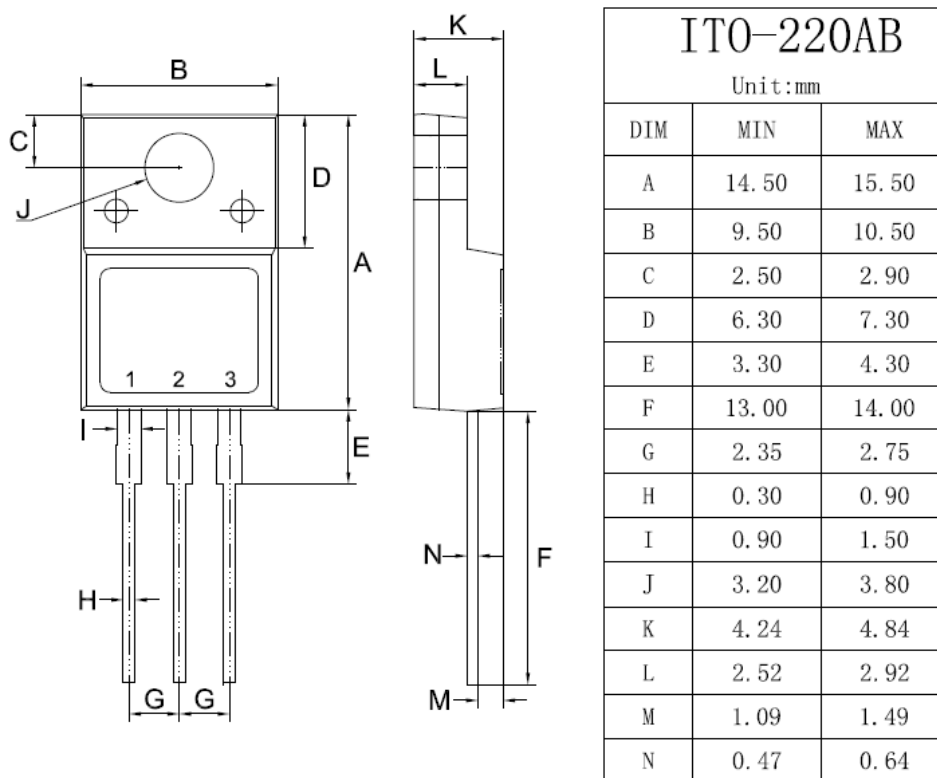
ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	700	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	-	4	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=3.5A$	-	1.1	1.2	Ω
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=700V, V_{GS}=0V$	-	-	1.0	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	± 100	nA
Diode Forward Voltage	V_{SD}	$I_S=7A, V_{GS}=0V$	-	-	1.4	V
Dynamic (Note 4)						
Total Gate Charge	Q_g	$V_{DS}=50V, I_D=1.3A,$ $I_G=100\mu A, V_{GS}=10V$ (Note 2,3)	-	19	-	nC
Gate-Source Charge	Q_{gs}		-	5	-	
Gate-Drain Charge	Q_{gd}		-	5.2	-	
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0\text{MHz}$	-	340	-	pF
Output Capacitance	C_{oss}		-	120	-	
Reverse Transfer Capacitance	C_{rss}		-	6.7	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=30V, I_D=1A,$ $R_G=25\Omega$ (Note 2,3)	-	50	-	ns
Turn-On Rise Time	t_r		-	70	-	
Turn-Off Delay Time	$t_{d(off)}$		-	140	-	
Turn-Off Fall Time	t_f		-	70	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	7	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}	---	-	-	28	A

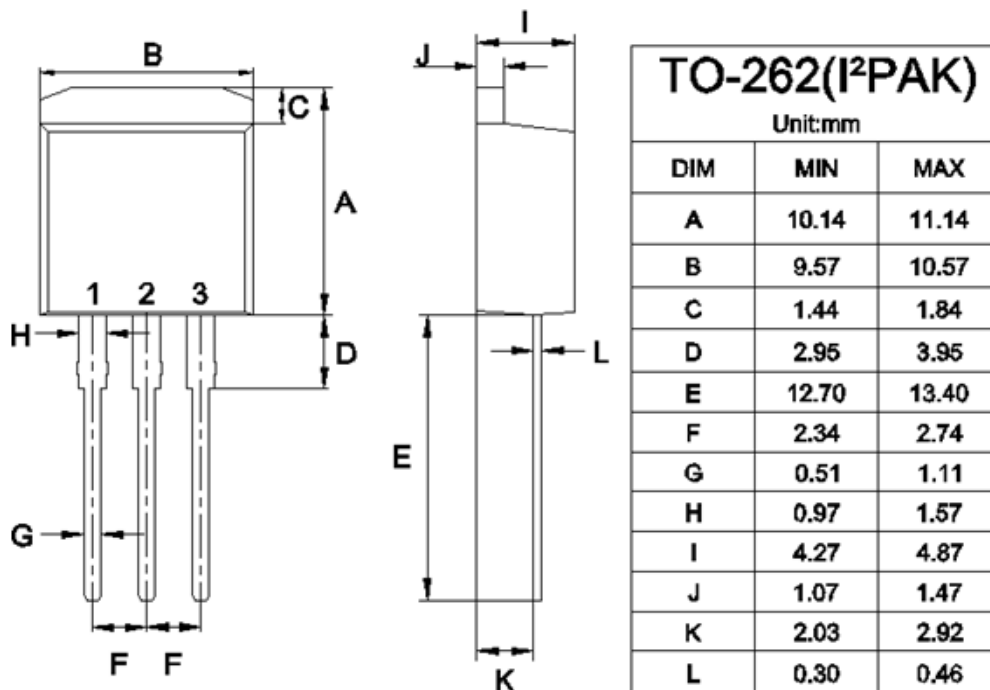
TO-220 Mechanical Drawing



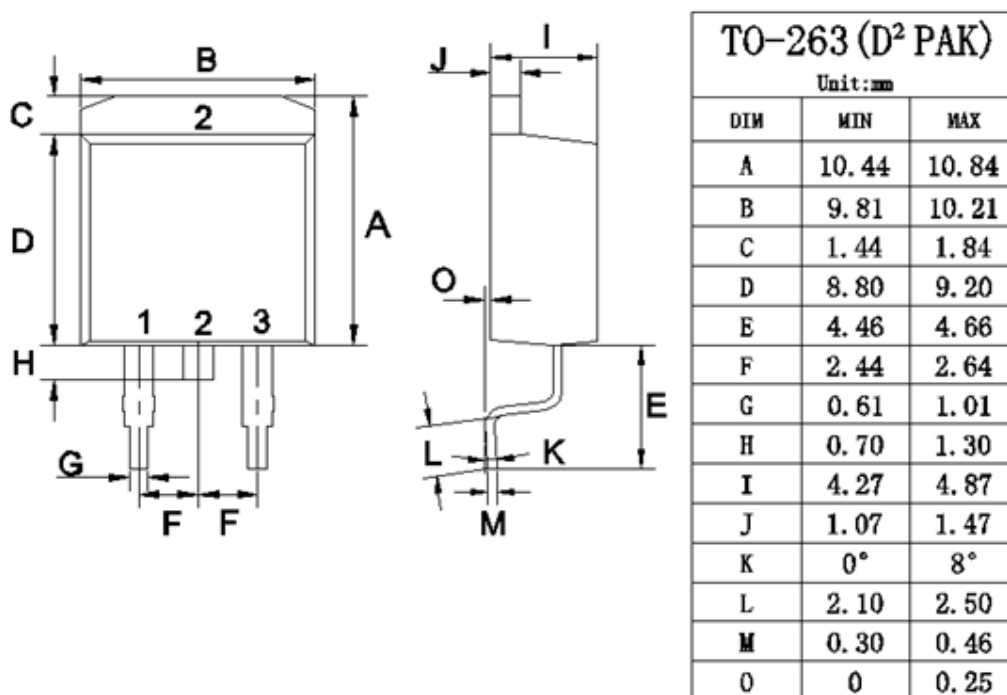
ITO-220 Mechanical Drawing



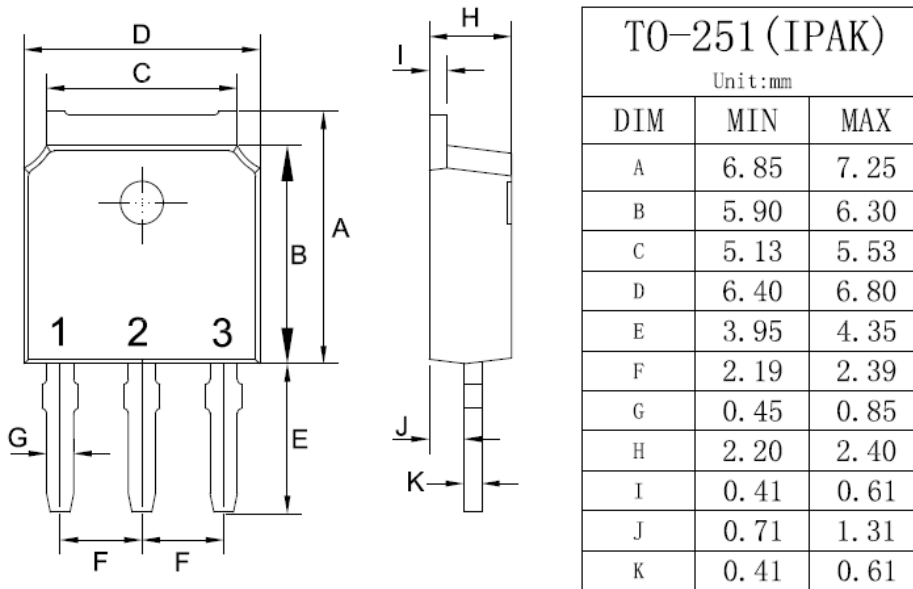
TO-262 Mechanical Drawing



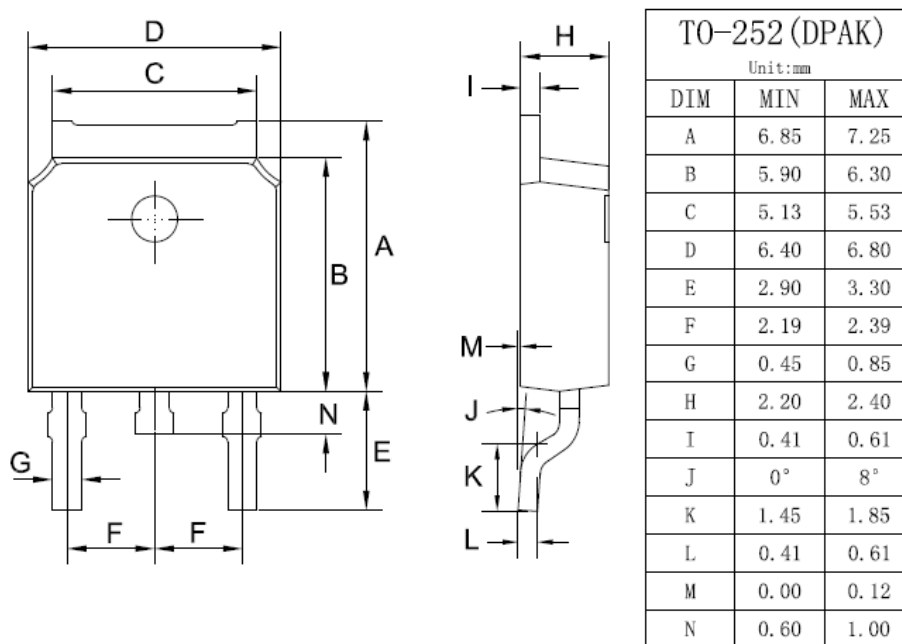
TO-263 Mechanical Drawing



TO-251 Mechanical Drawing



TO-252 Mechanical Drawing



Notice

Specifications of the products displayed herein are subject to change without notice. DIYI or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in DIYI's terms and conditions of sale for such products, DIYI assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of DIYI products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify DIYI for any damages resulting from such improper use or sale.