Descriptions

This is 800V 7A N-Channel Enhancement Mode Power MOSFETF.

Features

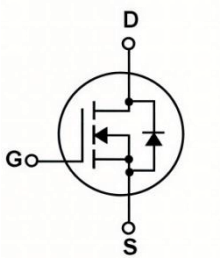
- LOW THERMAL RESISTANCE
- FAST SWITCHING
- HIGH INPUT RESISTANCE
- RoHS COMPLIANT

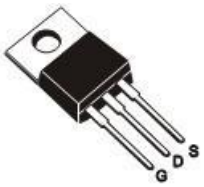
Parameter	Value	Unit
V_{DS}	800	V
I_D	7	A
$R_{DS(ON)MAX}$	1.3	Ω

Applications

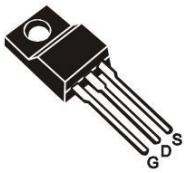
- ELECTRONIC BALLAST
- ELECTRONIC TRANSFORMER
- SWITCH MODE POWER SUPPLY

Equivalent Circuit Pinning

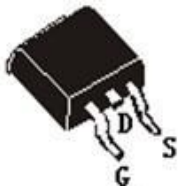




TO-220



TO-220FPL



TO-263(D^2PAK)

Absolute Maximum Ratings(Ta=25℃)

PARAMETER	SYMBOL	VALUE	UNIT
Drain-source Voltage	V_{DS}	800	V
gate-source Voltage	V_{GS}	±30	V
Continuous Drain Current TC=25℃	I_D	7.0	A
Continuous Drain Current TC=100℃	I_D	4.2	A
Drain Current —Pulsed ①	I_{DM}	28	A
Power Dissipation	P_{tot}	TO-220:167 TO-220FPL:48 TO-263:147	W
Junction Temperature	Tj	150	。C
Storage Temperature	T_{STG}	-55-150	。C
Single Pulse Avalanche Energy ②	E_{AS}	340	mJ

Electrical Characteristics(Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Drain-source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA	800			V
Breakdown Voltage Temperature Coefficient	ΔBV_{DSS} / ΔTj	I_D=250uA, Referenced to 25。C		0.65		V/。C
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS}=V_{DS}, I_D=250μA	2.0		4.0	V
Drain-source Leakage Current	I_{DSS}	V_{DS} =800V, V_{GS} =0V, Tj=25。C			1	μA
		V_{DS} =640V, V_{GS} =0V, Tj= 125。C			10	μA
Forward Transconductance	gfs	V_{DS} = 15V, I_D=3.5A ③		7.0		S

Electrical Characteristics(Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Gate-body Leakage Current (V_{DS} = 0)	I_{GSS}	V_{GS} =±30V			±100	nA
Static Drain-source On Resistance	$R_{DS(ON)}$	V_{GS} = 10V, I_D=3.5A ③		1.3	1.6	Ω
Input Capacitance	Ciss	V_{GS} = 0V, V_{DS} = 25V F = 1.0MHZ		1250		pF
Output Capacitance	Coss			100		
Reverse transfer Capacitance	Crss			9		
Turn-on Delay Time	Td(on)	V_{DD}=400V, I_D =6.0A R_G=27Ω ③		35.9		ns
Rise Time	Tr			65.8		
Turn -Off Delay Time	Td(off)			122.8		
Fall Time	Tf			21.9		
Total Gate Charge	Qg	I_D =7.0A, V_{DS} = 400V V_{GS} = 10V ③		30		nC
Gate-to-Source Charge	Qgs			8		nC
Gate-to-Drain Charge	Qgd			8.2		nC
Continuous Diode Forward Current	I_S				7.0	A
Diode Forward Voltage	V_{SD}	Tj=25°C, Is=7.0A V_{GS} =0V ③			1.4	V
Reverse Recovery Time	trr	Tj=25°C,If=6.0A di/dt= 100A/μs ③		137		ns
Reverse Recovery Charge	Qrr			4.63		uC

Thermal Characteristics

PARAMETER	SYMBOL	MAX			UNIT
		TO-220	TO-220FPL	TO-263	
Thermal Resistance Junction-case	Rth_{JC}	0.75	2.60	0.85	℃/W
Thermal Resistance Junction-ambient	Rth_{JA}	62.5	62.5	62.5	℃/W

Notes:
（1）Repetitive rating: Pulse width limited by maximum junction temperature
（2）Starting Tj=25oC, VDD =50V, L=14mH, RG =25Ω , IAS=7.0A
（3）Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2%

Marking Instructions

Note:

COT: Company Code

7N80: Product Type.

******: *: Inner Code * : Year Code **: Week Code **: Lot Code.

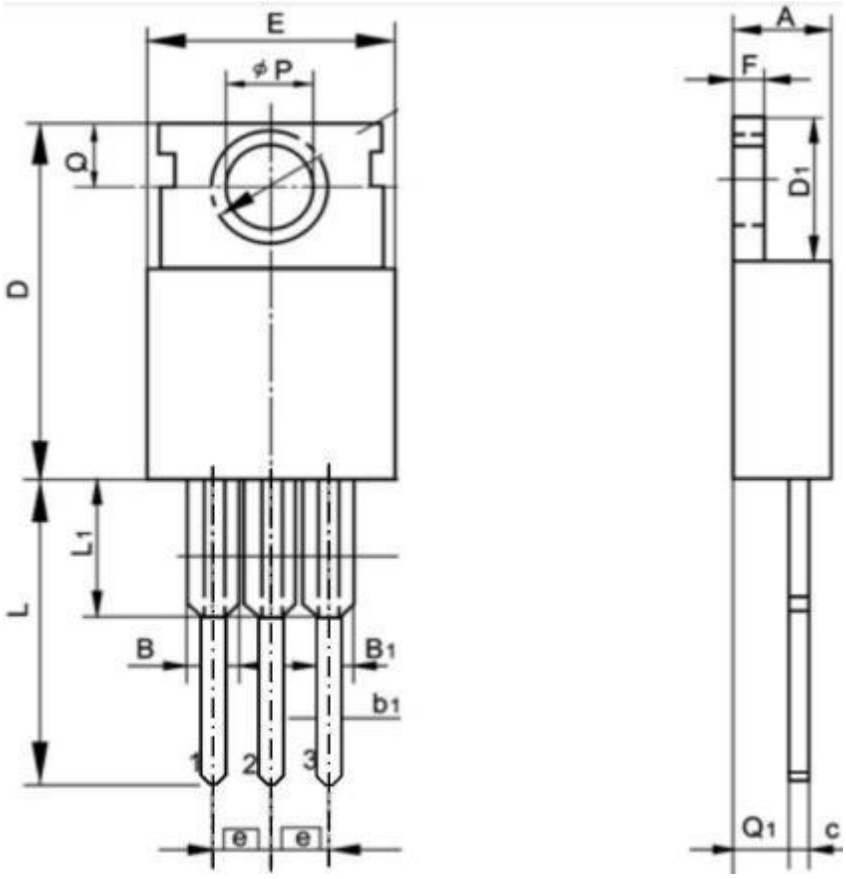
Packaging SPEC

Part	Package	Marking	Packing method
CT7N80RA	TO-220	7N80	TUBE
CT7N80FP	TO-220FPL	7N80	TUBE
CT7N80BD	TO-263	7N80	TAPE & REEL

Package Outline Dimensions

TO-220

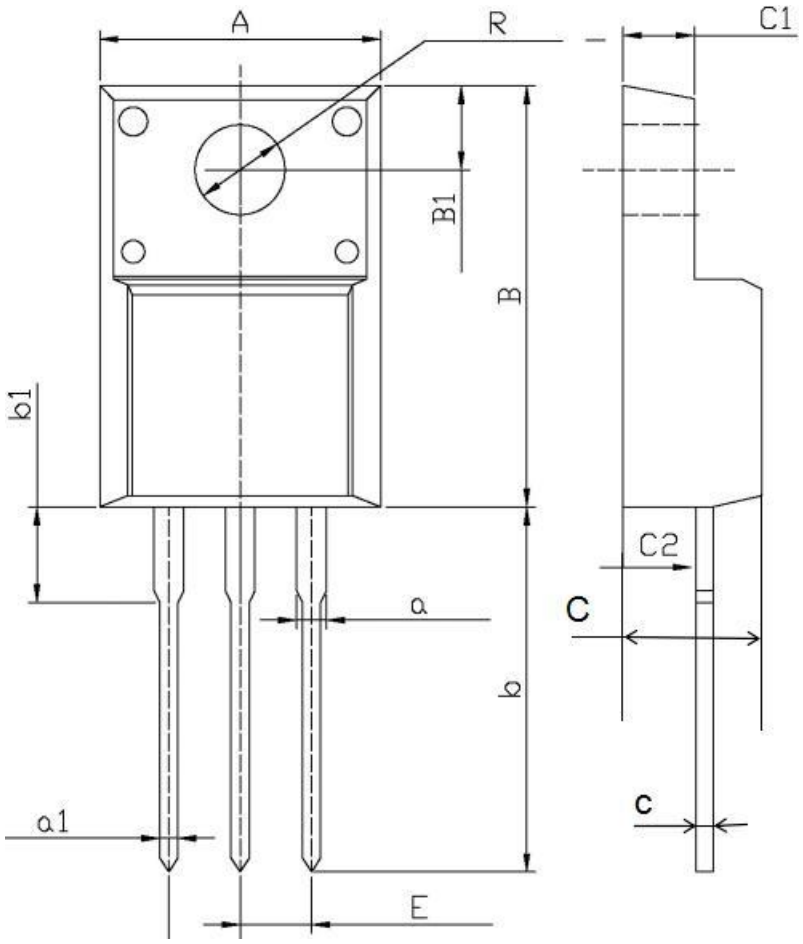
SYMBOL	min	nom	max	SYMBOL	min	nom	max
A	4.30		4.70	E	9.80		10.30
B	1.20		1.50	e		2.54	
B1	1.00		1.40	F	1.20		1.40
b1	0.65		1.00	L	12.50		13.50
c	0.35		0.75	L1	2.60		3.50
D	15.00		16.00	Q	2.50		3.00
D1	5.90		6.90	Q1	2.00		3.00
				ϕP	3.50		3.90



Package Outline Dimensions

TO-220FPL

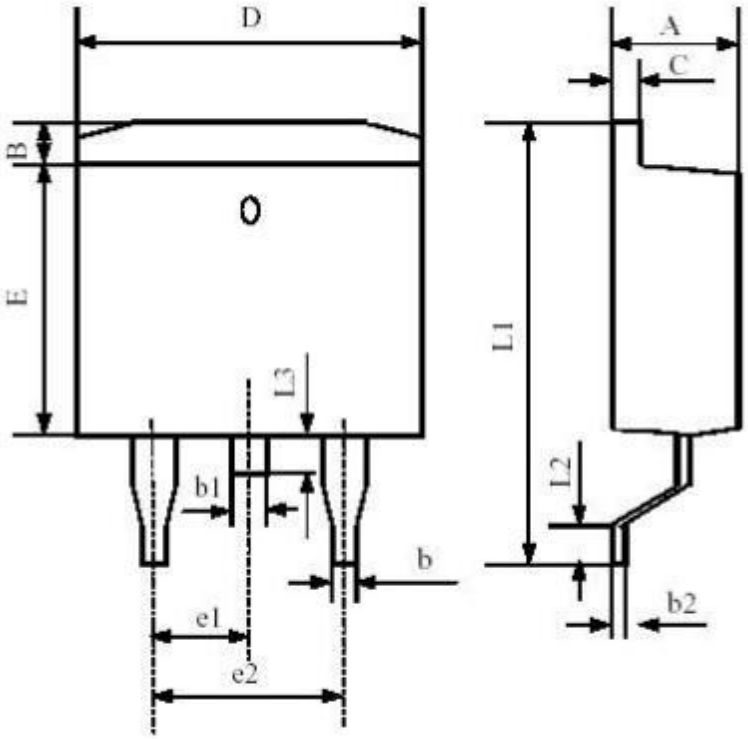
SYMBOL	min	nom	max	SYMBOL	min	nom	max
A	9.90		10.36	a	1.08		1.48
B	15.40		16.40	a1	0.70		0.90
B1	3.05		3.55	E	2.34		2.75
C	4.40		5.00	C1	2.25		2.85
c	0.40		0.60	C2	2.45		3.05
b	12.40		13.50	R	2.90		3.35
b1	2.60		3.60				



Package Outline Dimensions

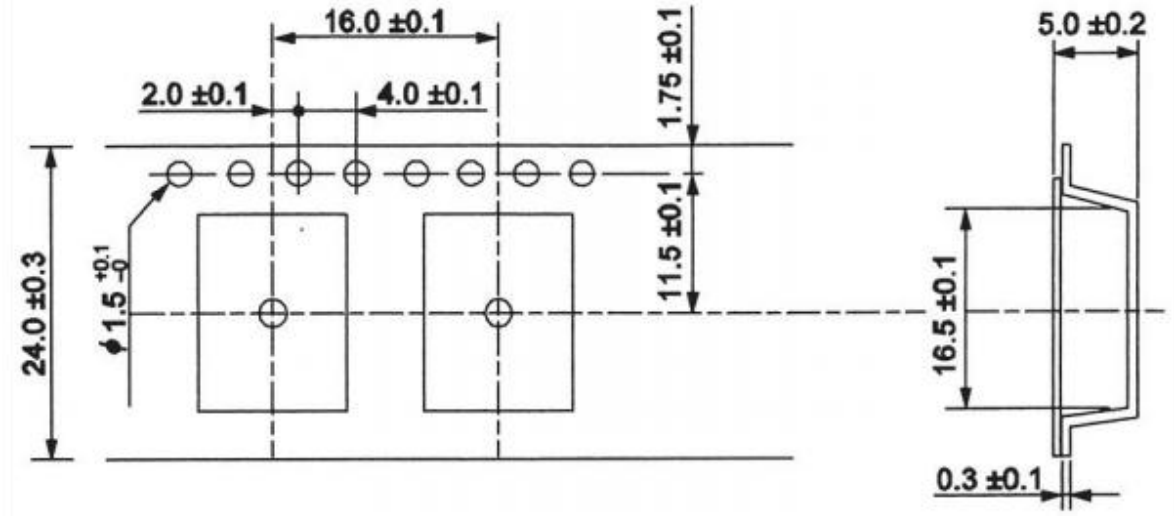
TO-263

SYMBOL	min	nom	max	SYMBOL	min	nom	max
A	4.42		4.72	E	8.99		9.29
B	1.22		1.32	e1	2.44		2.64
b	0.76		0.86	e2	4.98		5.18
b1	1.22		1.32	L1	15.19		15.79
b2	0.33		0.43	L2	2.29		2.79
C	1.22		1.32	L3	1.30		1.75
D	9.95		10.25				

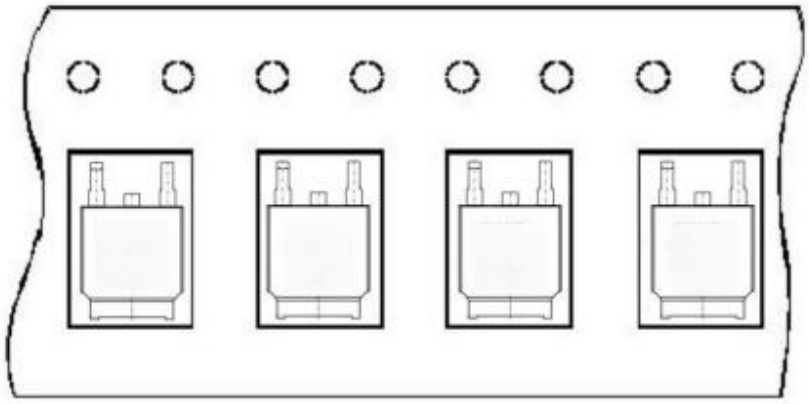


TAPE AND REEL DATA - TO-263

单位:毫米/UNIT：mm



使用供带方向/USER DIRECTION OF FEED



编带器件定位示意图/UNIT ORIENTATION