

**TO-263-2L Plastic-Encapsulate MOSFETS****CJB120SN10 N-Channel Power MOSFET**

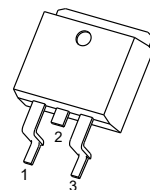
$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	I_D
100V	5.0mΩ@10V	120A

DESCRIPTION

The CJB120S10 uses shielded gate trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications

TO-263-2L

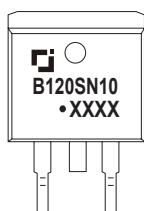
1. GATE
2. DRAIN
3. SOURCE

**FEATURES**

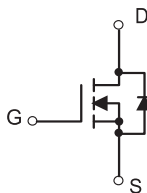
- Low $R_{DS(on)}$
- Low Gate Charge

APPLICATIONS

- High efficiency power supply
- Secondary synchronus rectifier

MARKING

B120SN10 = Device code.
Solid dot = Green molding compound device,
if none, the normal device.
XXXX = Code.

EQUIVALENT CIRCUIT**MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)**

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	$I_D^{(1)}$	120	A
Pulsed Drain Current	$I_{DM}^{(2)}$	480	A
Single Pulsed Avalanche Energy	$E_{AS}^{(3)}$	200	mJ
Power Dissipation	$P_D^{(1)}$	230	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}^{(6)}$	62.5	°C/W
Thermal Resistance from Junction to Case	$R_{\theta JC}^{(1)}$	0.54	°C/W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 ~+150	°C

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition		Min	Typ	Max	Unit
Off characteristics							
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D = 250uA		100			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =100V, V _{GS} =0V	T _J =25 ℃			1	μA
			T _J =125 ℃			100	
Gate-body leakage current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V				±100	nA
On characteristics ④							
Gate-threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA		2.0	3.0	4.0	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 20A			5.0	5.8	mΩ
Dynamic characteristics ④ ⑤							
Input capacitance	C _{iSS}	V _{DS} = 25V,V _{GS} = 0V, f = 1MHz			4190	8380	pF
Output capacitance	C _{oSS}				1777	3500	
Reverse transfer capacitance	C _{rSS}				34	69	
Gate resistance	R _g	f = 1MHz			1.8		Ω
Switching characteristics ④ ⑤							
Total gate charge	Q _g	V _{DS} =80V,I _D =20A V _{GS} =10V,R _G =3.3Ω			68	140	nC
Gate-source charge	Q _{gs}				15	30	
Gate-drain charge	Q _{gd}				20	42	
Turn-on delay time	t _{d(on)}	V _{DS} =80V,I _D =20A V _{GS} =10V,R _G =3.3Ω			13		ns
Turn-on rise time	t _r				60		
Turn-off delay time	t _{d(off)}				40		
Turn-off fall time	t _f				64		
Drain-Source Diode Characteristics							
Drain-source diode forward voltage(note1)	V _{SD} ④	V _{GS} = 0V, I _S = 20A				1.2	V
Continuous drain-source diode forward current	I _S ①					120	A
Pulsed drain-source diode forward current	I _{SM} ②					480	A

Notes:

1. $T_C=25^{\circ}\text{C}$ Limited only by maximum temperature allowed.

2. $P_W \leq 10\mu s$, Duty cycles $\leq 1\%$.

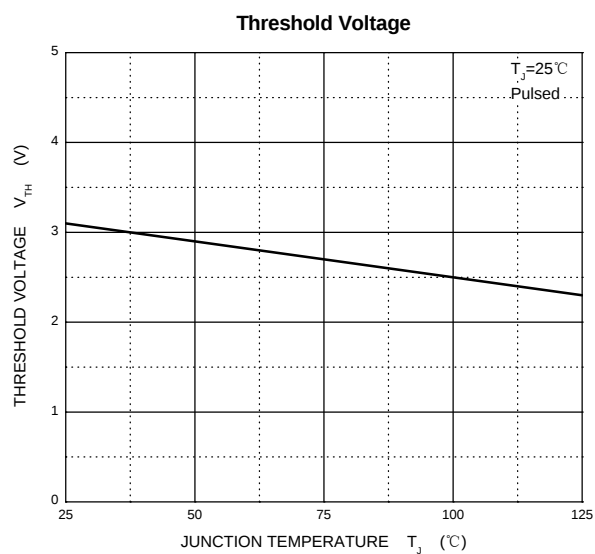
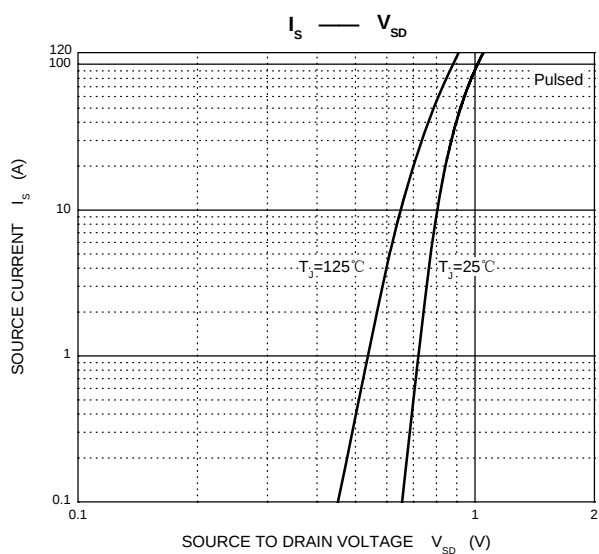
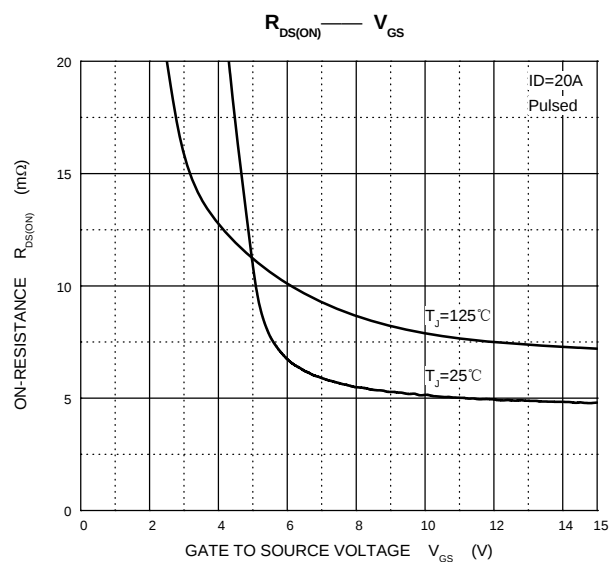
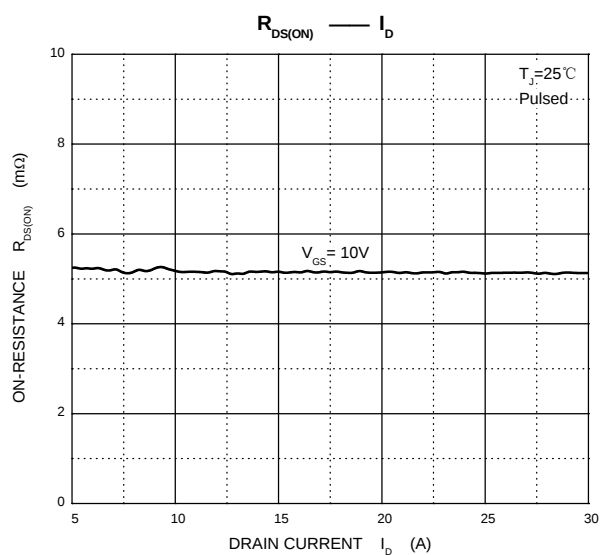
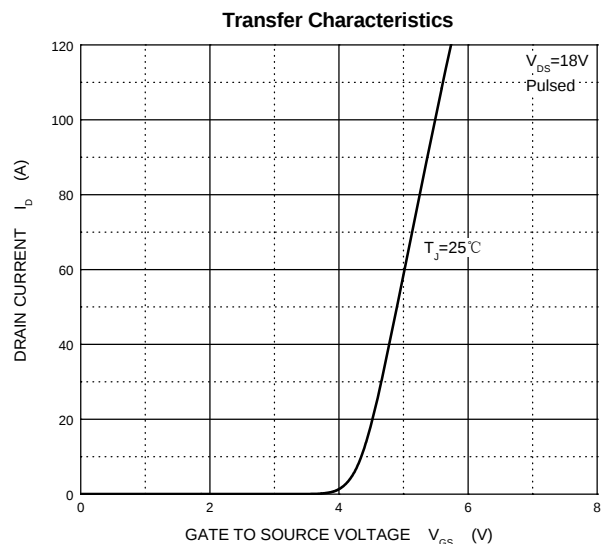
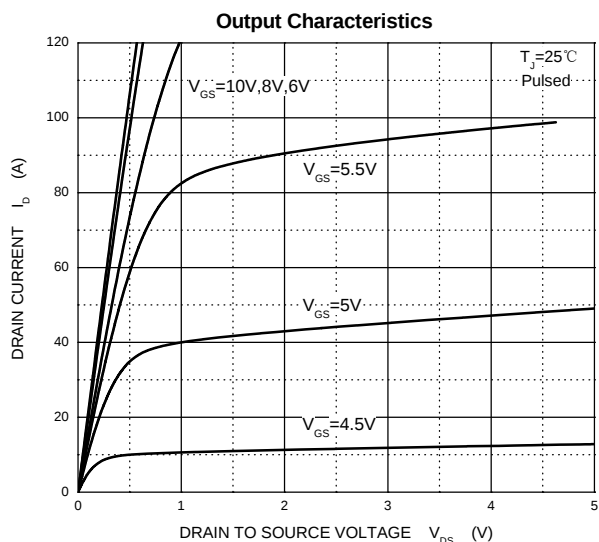
3. EAS condition: $V_{DD}=50V, V_{GS}=10V, L=0.5mH, R_g=25\Omega$ Starting $T_J = 25^{\circ}\text{C}$.

4. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.

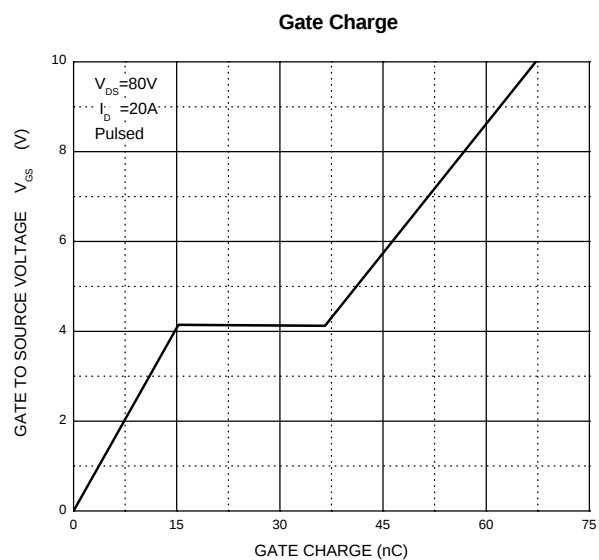
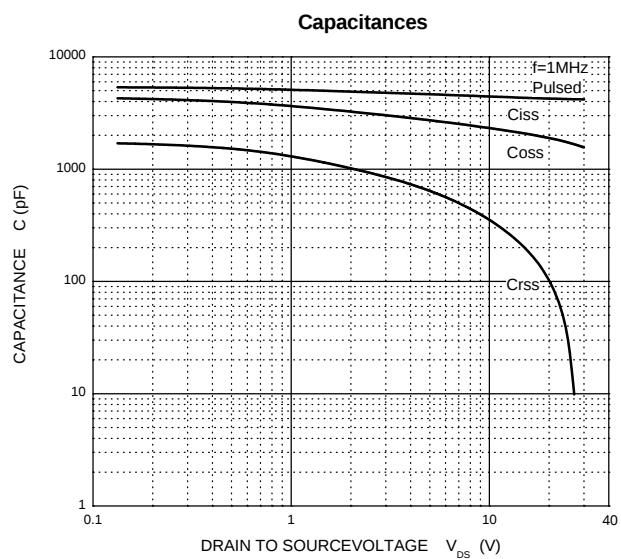
5. Guaranteed by design, not subject to production.

6. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a=25^{\circ}\text{C}$.

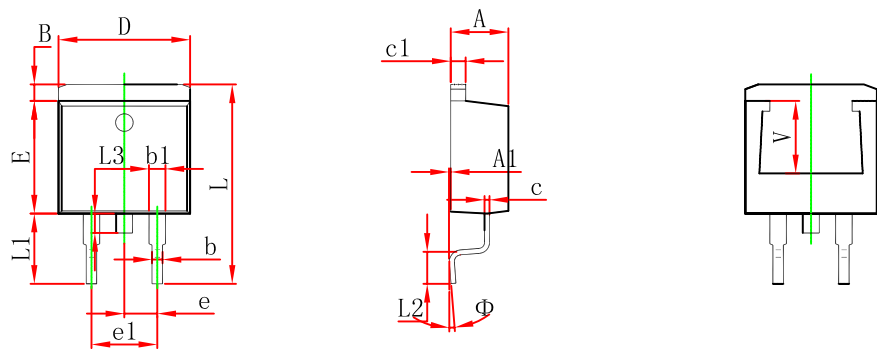
Typical Characteristics



Typical Characteristics

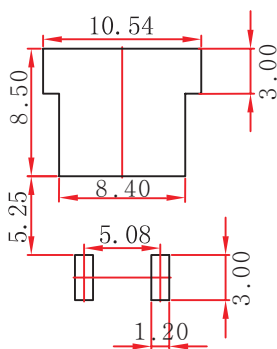


TO-263-2L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	

TO-263-2L Suggested Pad Layout



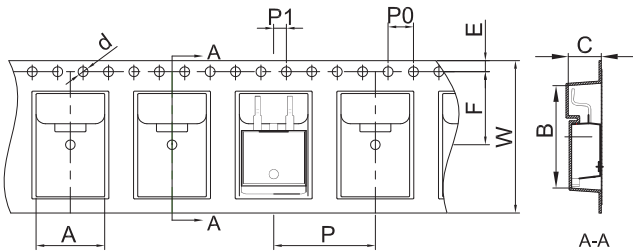
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

JSCJ reserves the right to make modifications,enhancements,improvements,corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

TO-263-2L Tape and Reel

TO-263-2L Embossed Carrier Tape

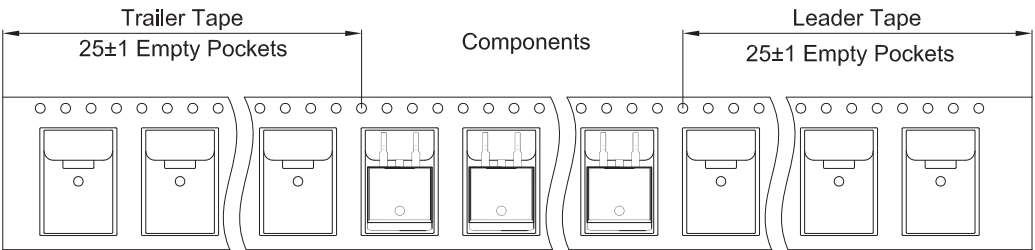


Packaging Description:

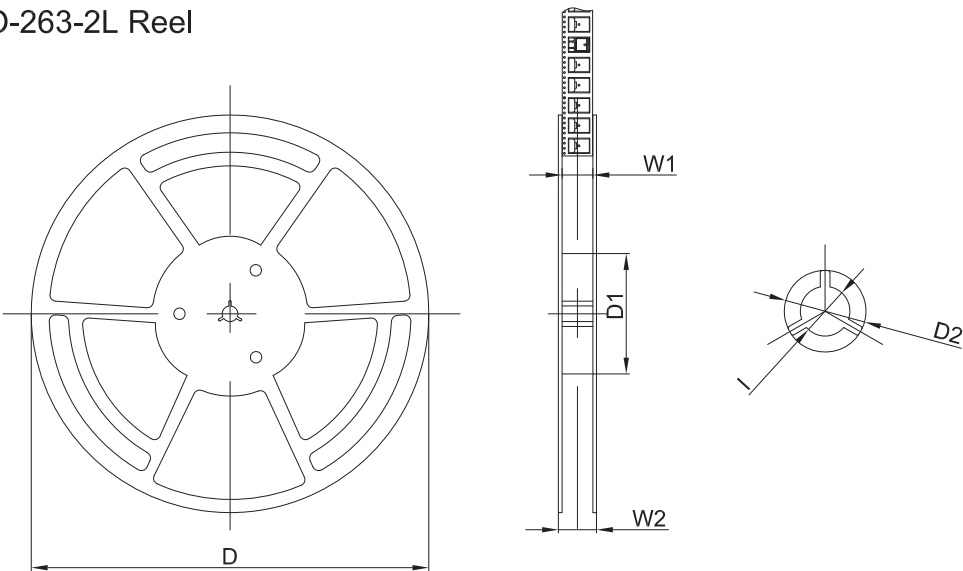
TO-263-2L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 800 units per 13" or 33.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
TO-263-2L	10.80	16.13	5.21	Ø1.55	1.75	11.50	4.00	16.00	2.00	24.00

TO-263-2L Tape Leader and Trailer



TO-263-2L Reel



Dimensions are in millimeter						
Reel Option	D	D1	D2	W1	W2	I
13"Dia	Ø330.00	100.00	Ø21.00	24.4	30.4	Ø13.00

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
800 pcs	13 inch	800 pcs	340×336×36	8,000 pcs	400×353×365	