

MAIN CHARACTERISTICS

I_D	6A
V_{DSS}	900V
$R_{DS(on)-typ}$ (@ $V_{GS}=10V$)	1.85 Ω

FEATURES

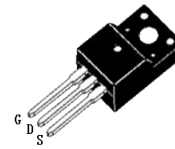
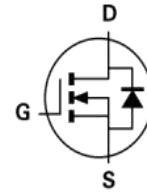
- Fast Switching
- Low ON Resistance
- Low Gate Charge
- 100% Single Pulse avalanche energy Test

APPLICATIONS

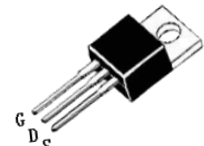
- LED power supplies
- Cell Phone Charger
- Standby Power

MECHANICAL DATA

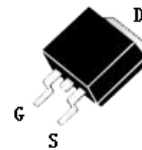
- Case: Molded plastic
- Mounting Position: Any
- Molded Plastic: UL Flammability Classification Rating 94V-0
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Solder bath temperature 275°C maximum, 10s per JESD 22-B106



TO-220F



TO-220AB



TO-263

Product specification classification

Part Number	Package	Mode Name	Pack
CS6N90A8	TO-220F (1.3mm)	CS6N90A	Tube
CS6N90A1	TO-220AB	CS6N90A	Tube
CS6N90A3	TO-263	CS6N90A	Tube
CS6N90A3-R	TO-263	CS6N90A	Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Parameter	Symbol	Value		Unit
		220AB/263	220F	
Drain-Source Voltage	V_{DS}	900		V
Gate-Source Voltage	V_{GS}	± 30		V
Continue Drain Current	I_D	6		A
Pulsed Drain Current (Note1)	I_{DM}	24		A
Power Dissipation	P_D	120	48	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	120		mJ
Operating Temperature Range	T_J	150		°C
Storage Temperature Range	T_{STG}	-55 to +150		°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.04	2.6	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	62.5	°C/W

Note1:Pulse test: 300 μ s pulse width, 2 % duty cycle

Electrical Characteristics at Tc=25°C unless otherwise specified

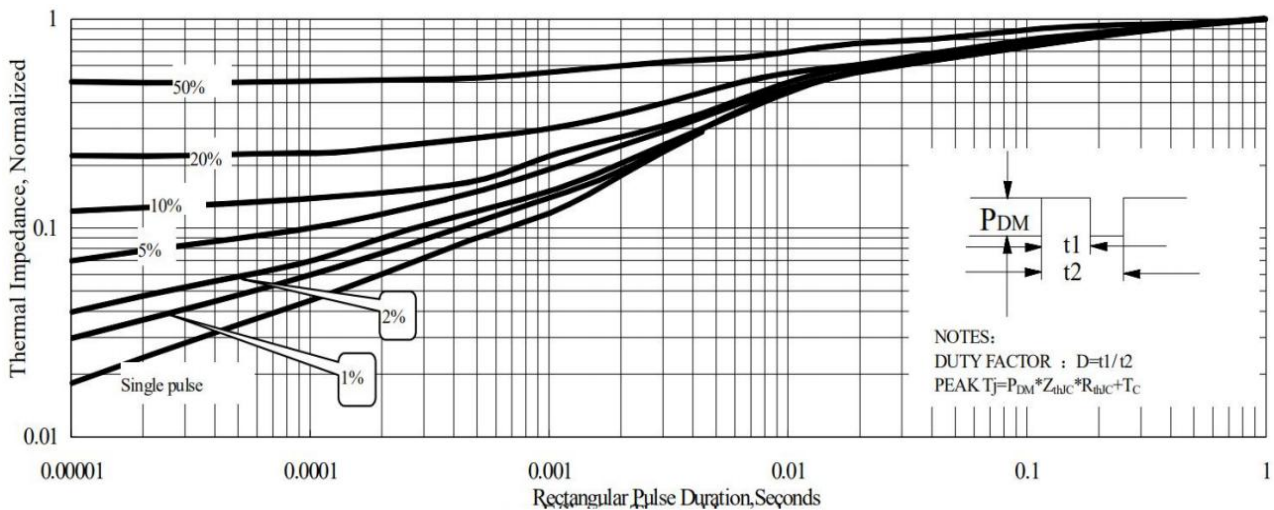
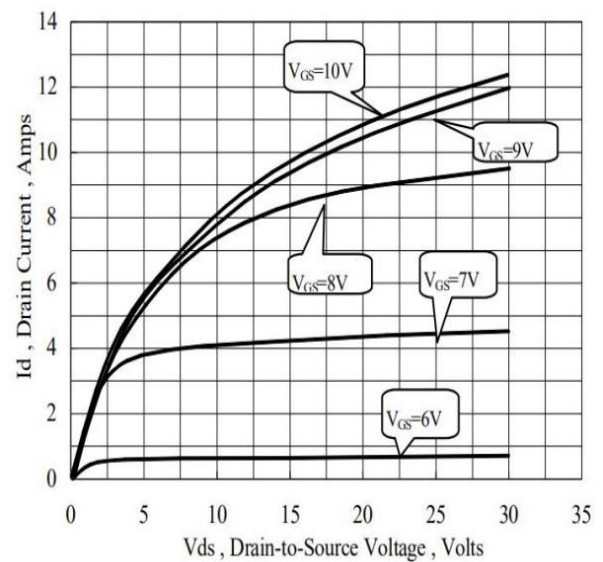
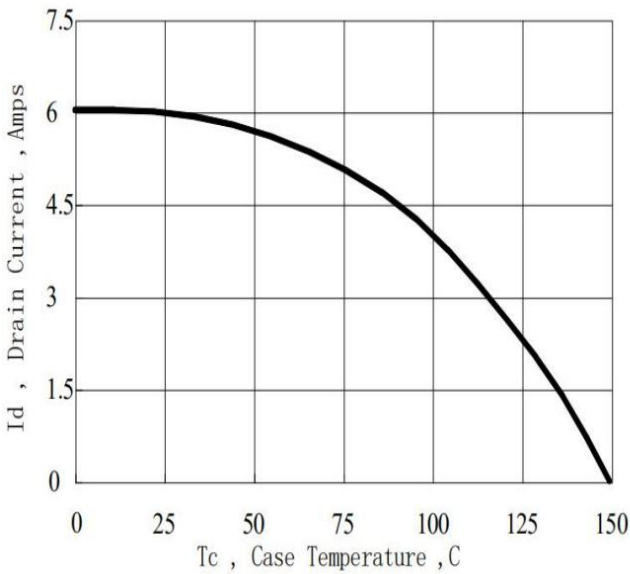
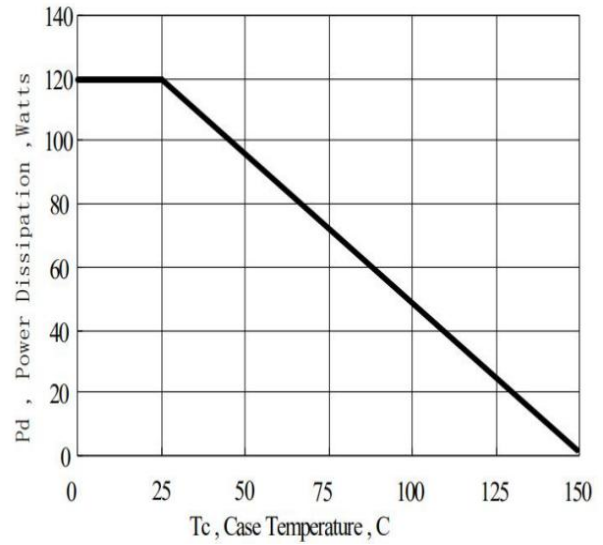
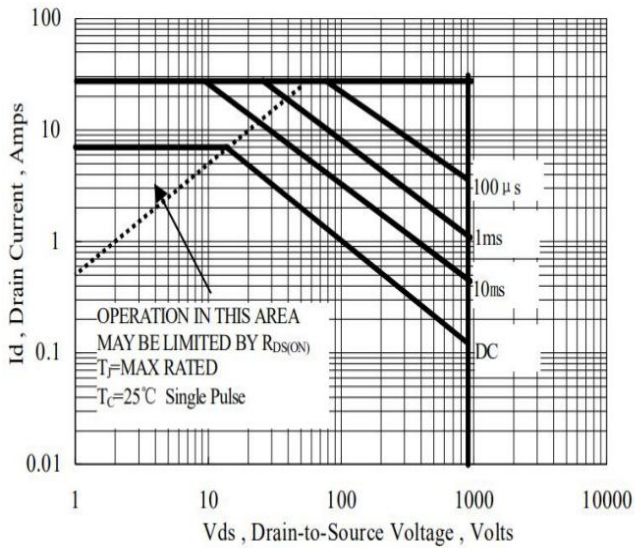
Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_D = 250\text{ }\mu\text{A}$	BV_{DSS}	900	-	-	V
Drain-Source Leakage Current	$V_{DS} = 900\text{ V}, V_{GS} = 0\text{ V}$	I_{DSS}	-	-	1	μA
Gate Leakage Current	$V_{GS} = \pm 30\text{ V}, V_{DS} = 0\text{ V}$	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance	$V_{GS} = 10\text{ V}, I_D = 3\text{ A}$	$R_{DS(on)}$	-	1.85	2.3	Ω
Forward Transconductance	$V_{DS} = 40\text{ V}, I_D = 3\text{ A}$	g_{fs}	-	7.5	-	S
Input Capacitance	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V},$ $f = 1\text{ MHz}$	C_{iss}	-	1355	-	pF
Output Capacitance		C_{oss}	-	110	-	pF
Reverse Transfer Capacitance		C_{rss}	-	11	-	pF
Turn-on Delay Time(Note2)	$I_D = 6\text{ A}, V_{DD} = 450\text{ V},$ $R_G = 25\Omega$	$t_{d(ON)}$	-	20	-	ns
Rise Time(Note2)		t_r	-	42	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	88	-	ns
Fall Time(Note2)		t_f	-	49	-	ns
Total Gate Charge(Note2)	$I_D = 6\text{ A}, V_{DD} = 450\text{ V},$ $V_{GS} = 10\text{ V}$	Q_G	-	34	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	6	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	14	-	nC

Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

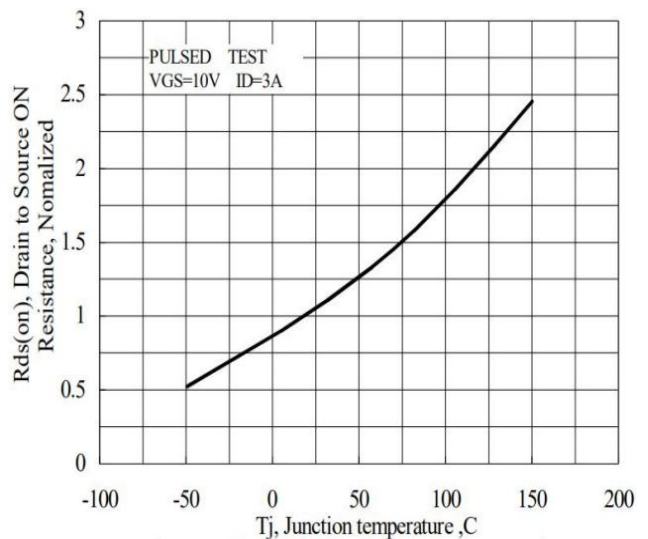
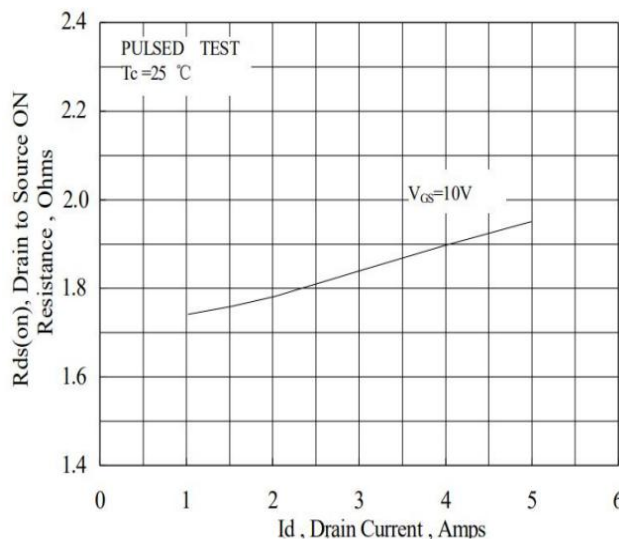
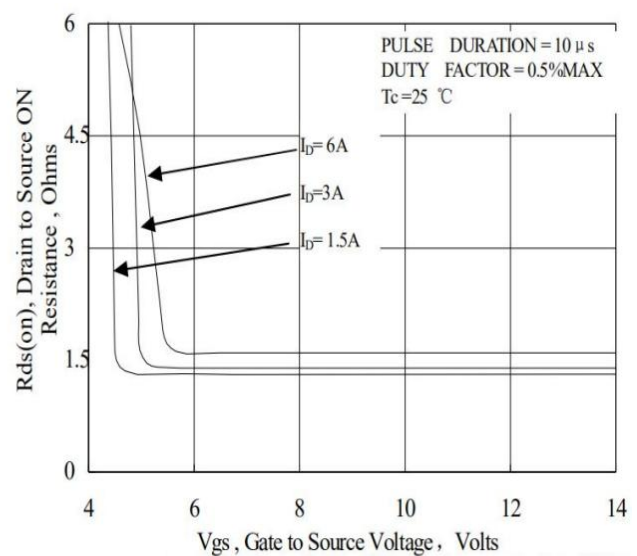
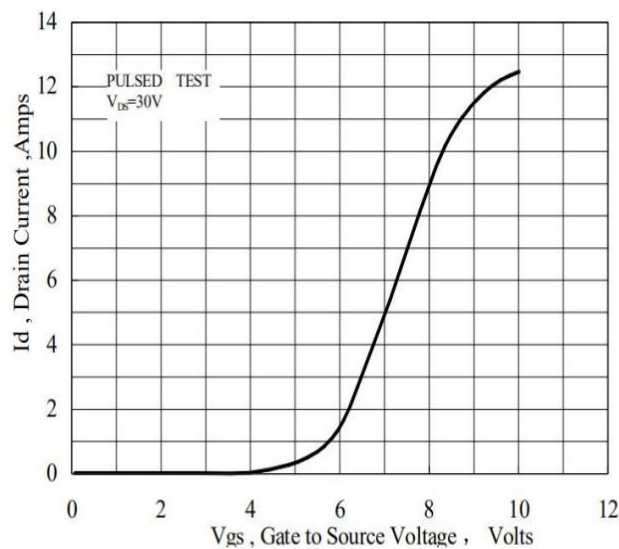
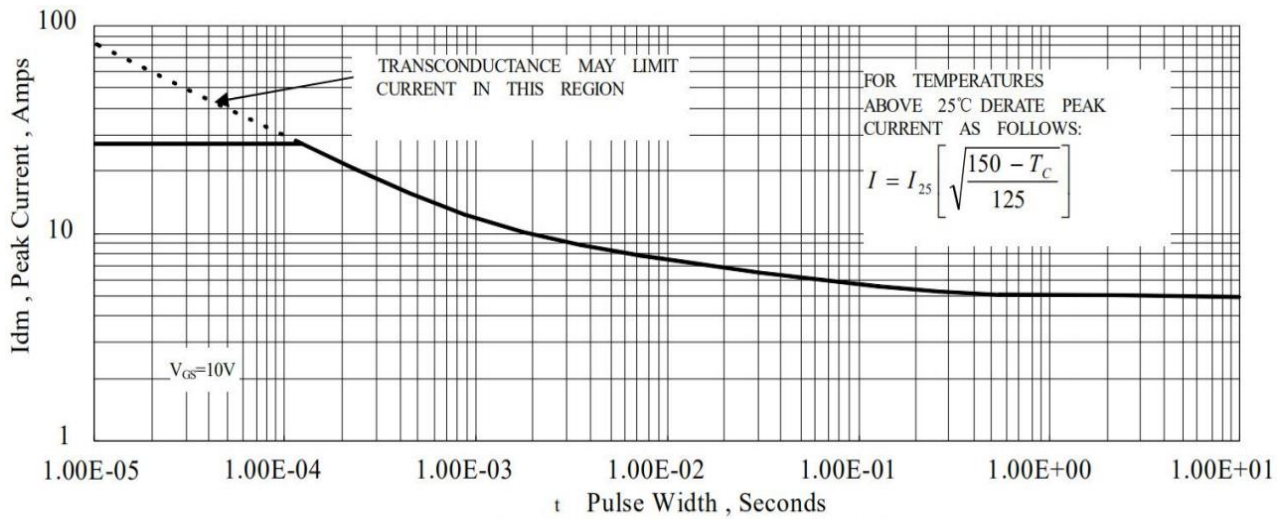
Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	6	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	24	A
Drain-Source Diode Forward Voltage	$I_{SD} = 6\text{ A}$	V_{SD}	-	-	1.4	V
Reverse Recovery Time(Note2)	$I_{SD} = 6\text{ A}, V_{GS} = 0\text{ V},$ $di_F / dt = 100\text{ A}/\mu\text{s}$	t_{rr}	-	220	-	ns
Reverse Recovery Charge(Note2)		Q_{rr}	-	1110	-	nC

Note2:Pulse test: 300 μ s pulse width, 2 % duty cycle

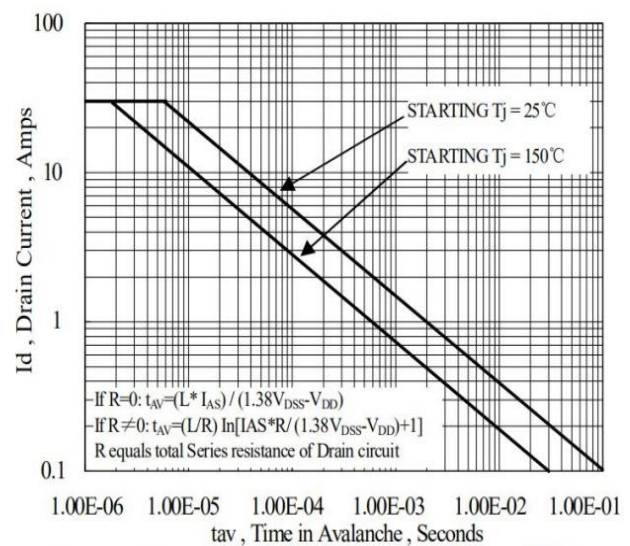
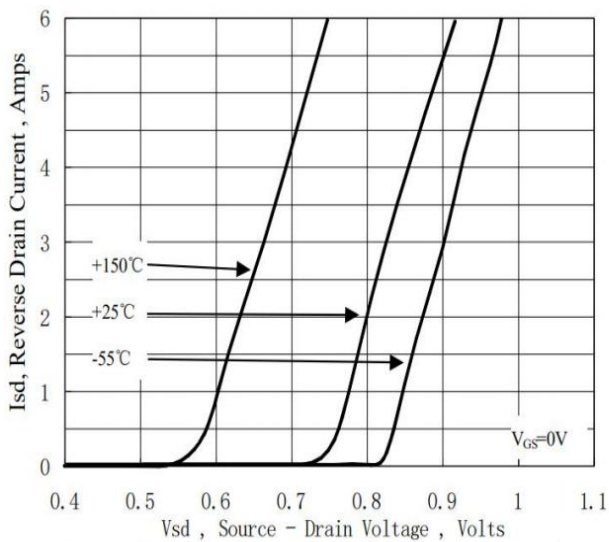
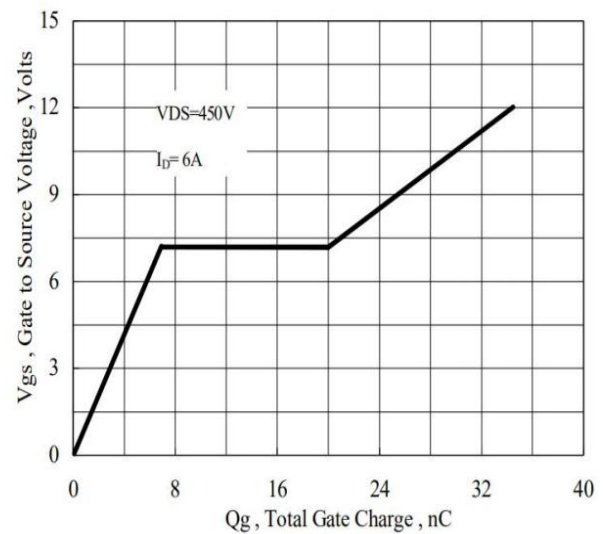
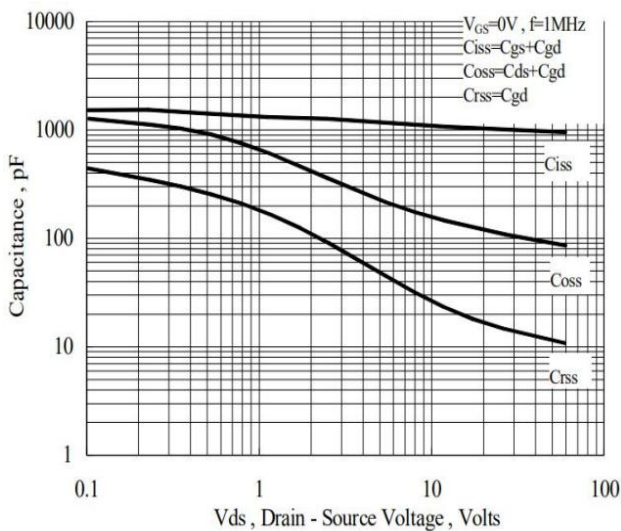
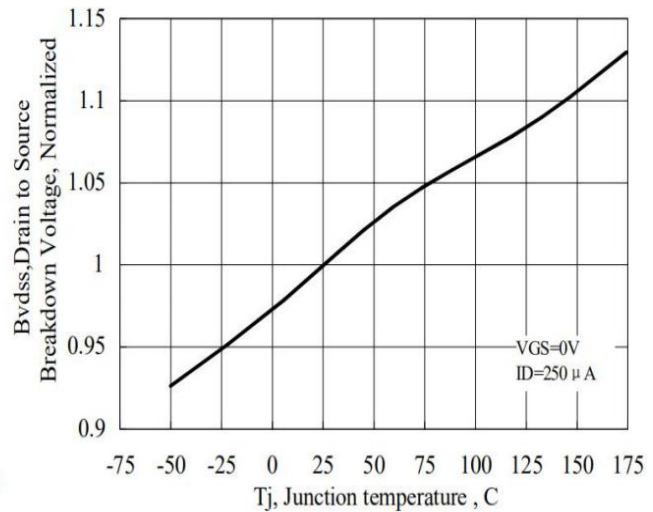
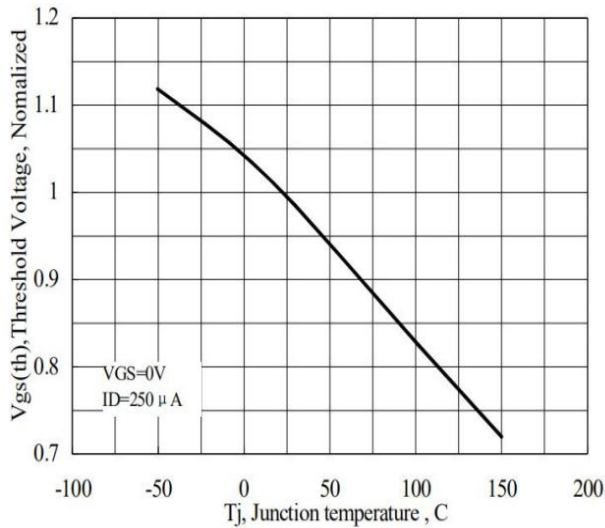
RATINGS AND CHARACTERISTIC CURVES



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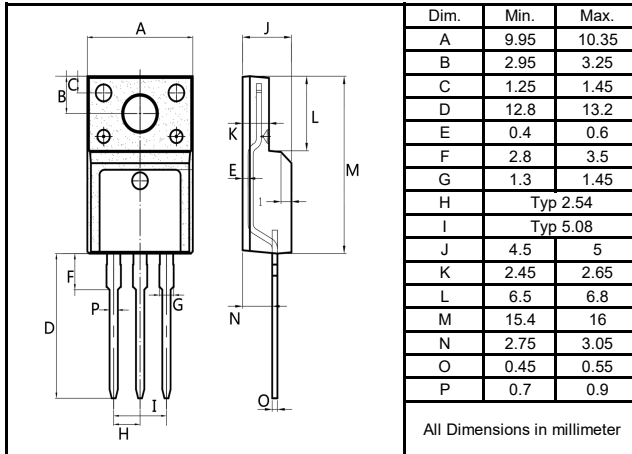


RATINGS AND CHARACTERISTIC CURVES

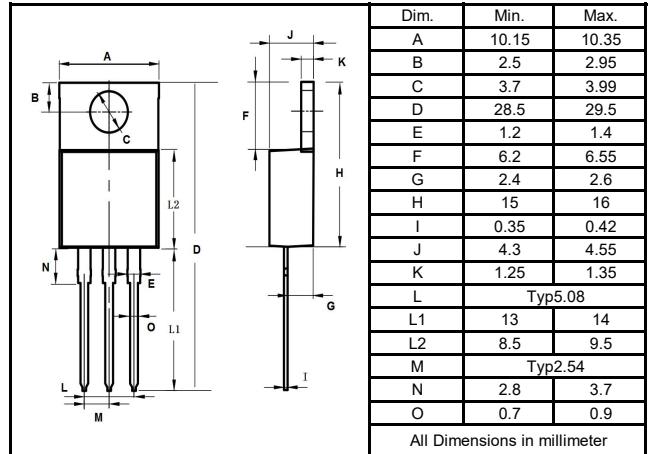


Package Outline Dimensions millimeters

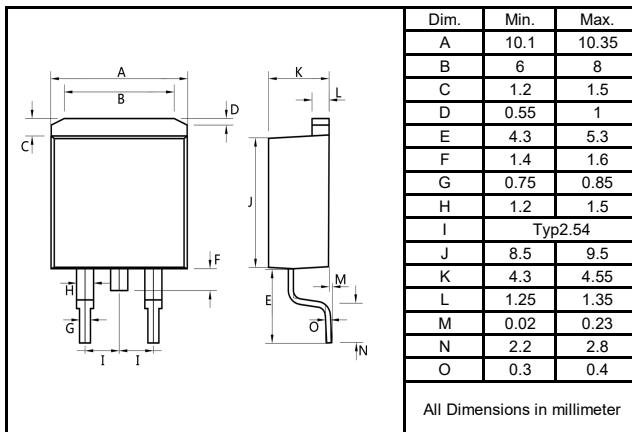
T0-220F



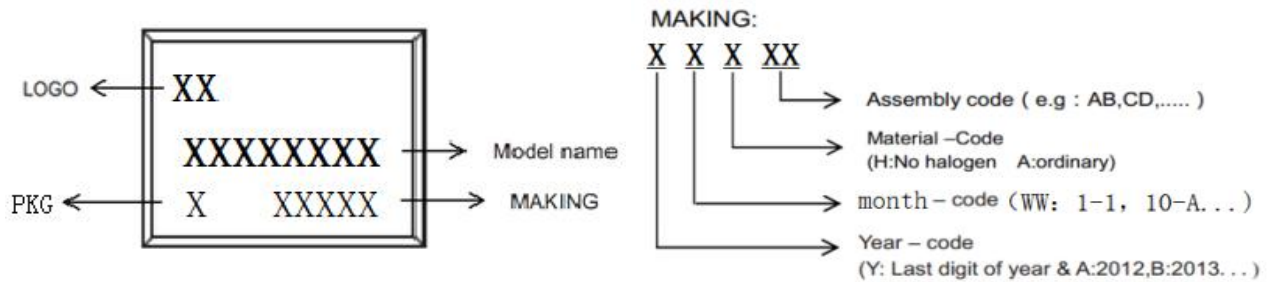
T0-220AB



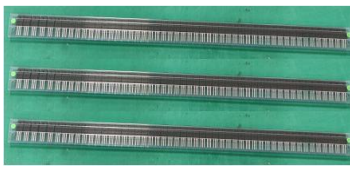
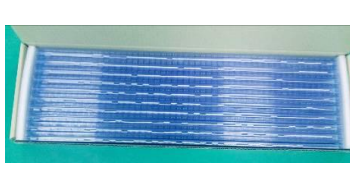
T0-263



Marking on the body



packing instruction

PKG	最小包装	内盒	外箱
TO-220F TO-220AB TO-263			
	50pcs/管	1000pcs/盒	5000pcs/箱
TO-263-R			
	800pcs/盘	1600pcs/盒	8000pcs/箱

Notice

All product,product specifications and data are subject to change without notice to improve.The right to explain is owned by LINGXUN electronics company.

Confirm that operation temperature is within the specified range described in the product specification. Avoid applying poer exceeding normal ratedpoer; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.

LINGXUN electronics shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this documentpoer; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.