

Features

- Very low FOM $R_{DS(on)} \times Q_G$
- 100% avalanche tested

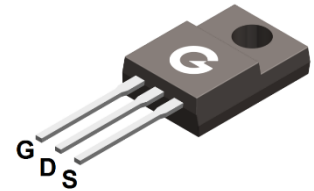
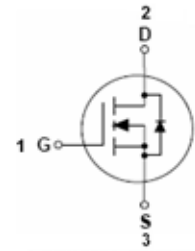
HF

APPLICATIONS

- Switch Mode Power Supply (SMPS)
- Uninterruptible Power Supply (UPS)
- Power Factor Correction (PFC)

Mechanical Data

- Case: ITO-220AB
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



ITO-220AB

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
SJ70R550F	ITO-220AB	50 pcs / Tube	SJ70R550F

Maximum Ratings (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	700	V
Gate-to-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current ($T_C = 25^\circ\text{C}$)	I_D	11	A
Continuous Drain Current ($T_C = 100^\circ\text{C}$)	I_D	6.8	A
Pulsed Drain Current *1	I_{DM}	33	A
Single Pulse Avalanche Energy *2	E_{AS}	211	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation($T_C = 25^\circ\text{C}$)	P_D	31.3	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	80	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	4	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

Electrical Characteristics (@ $T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	700	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 700V, V _{GS} = 0V	-	-	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±30V, V _{DS} = 0V	-	-	±100	nA
On Characteristics						
R _{DS(ON)}	Static Drain-Source On-resistance ^{*3}	V _{GS} = 10V, I _D = 5.5A	-	-	0.55	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	2.5	-	4.5	V
g _{fs}	Forward Transconductance ^{*3}	V _{DS} = 10V, I _D = 5.5A	-	7.8	-	S
Dynamic Characteristics						
C _{ISS}	Input Capacitance	V _{GS} = 0V	-	909	-	pF
C _{OSS}	Output Capacitance	V _{DS} = 50V	-	45	-	
C _{RSS}	Reverse Transfer Capacitance	f = 1.0MHz	-	3.4	-	
Switching Characteristics						
t _{d(ON)}	Turn-on Delay Time	V _{DD} = 400V R _G = 25Ω I _D = 11A	-	41	-	ns
t _r	Turn-on Rise Time		-	20	-	
t _{d(OFF)}	Turn-Off Delay Time		-	123	-	
t _f	Turn-Off Fall Time		-	6.4	-	
Q _G	Total Gate-Charge	V _{DD} = 560V	-	21	-	nC
Q _{GS}	Gate to Source Charge	V _{GS} = 10V	-	4.7	-	
Q _{GD}	Gate to Drain (Miller) Charge	I _D = 11A	-	7.3	-	
Source-Drain Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} = 11A, V _{GS} = 0V, T _J = 25°C	-	-	1.2	V
I _S	Diode Continuous Forward Current	T _C = 25°C	-	-	9.2	A
I _{SM}	Pulsed Source-Drain Current		-	-	29	A
t _{rr}	Reverse Recovery Time	I _S = I _F = 9.2A, V _R = 560V	-	280	-	ns
Q _{rr}	Reverse Recovery Charge	di/dt = 100 A/μs	-	2.8	-	μC

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. $I_{AS} = 1.6A, V_{DD} = 50V, R_G = 25\Omega$, Starting $T_J = 25^\circ\text{C}$
3. Pulse Test: Pulse width $\leq 300\mu s$, Duty Cycle $\leq 1\%$

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

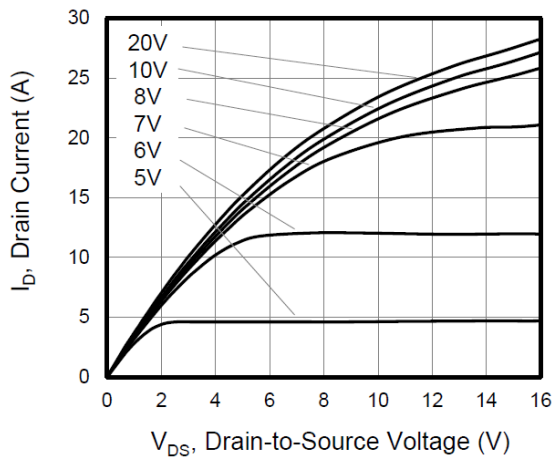


Fig 1 Typical Output Characteristics

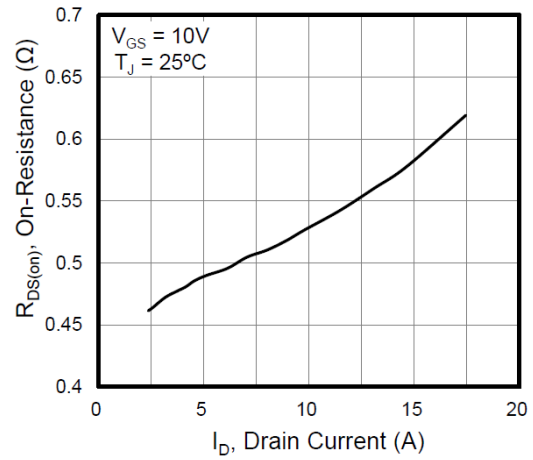


Fig 2 On-Resistance vs. Drain Current
and Gate Voltage

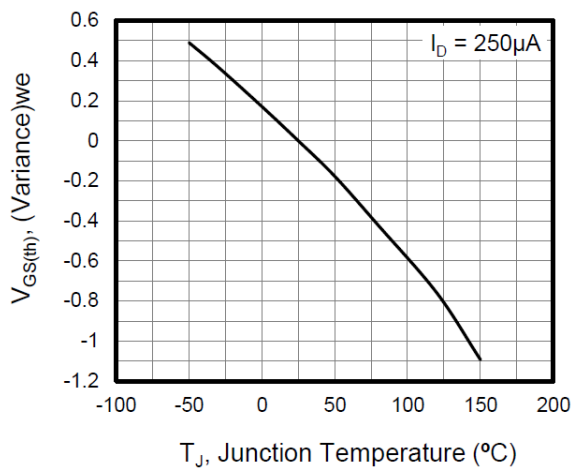


Fig 3 Normalized $V_{GS(th)}$ vs. Junction Temperature

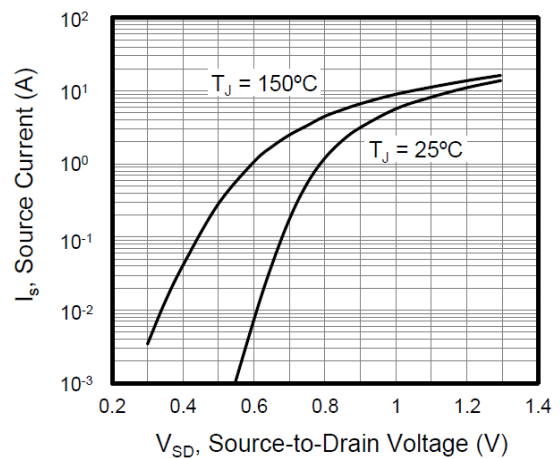


Fig 4 Body-Diode Characteristics

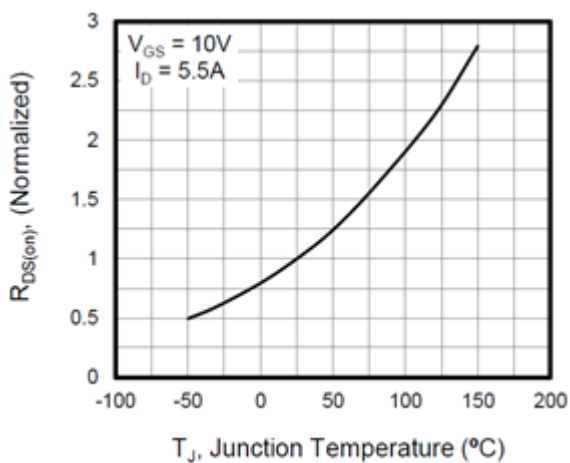


Fig 5 Normalized On-Resistance vs. Junction
Temperature

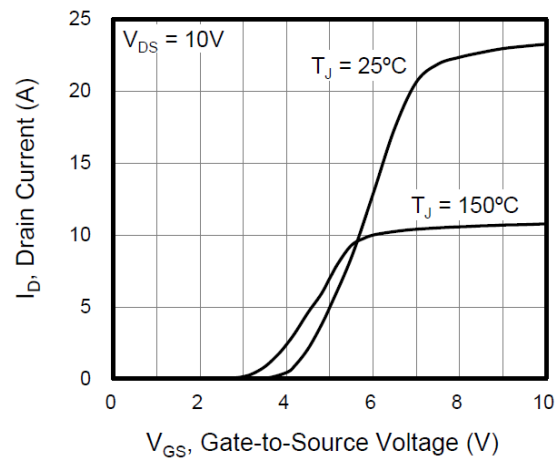


Fig 6 Transfer Characteristics

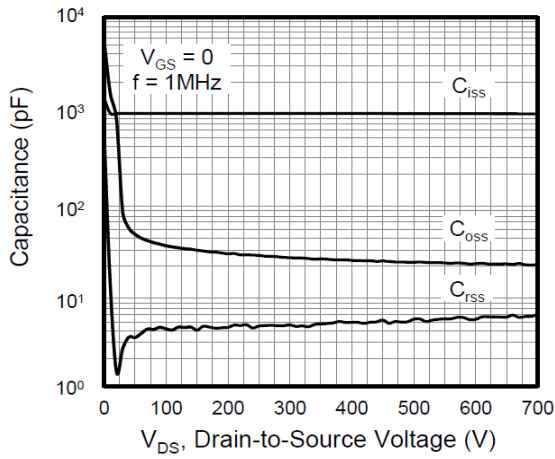


Fig 7 Capacitance Characteristics

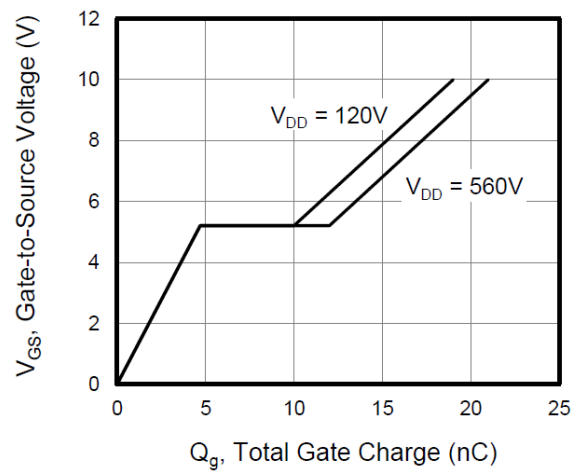


Fig 8 Gate-Charge Characteristics

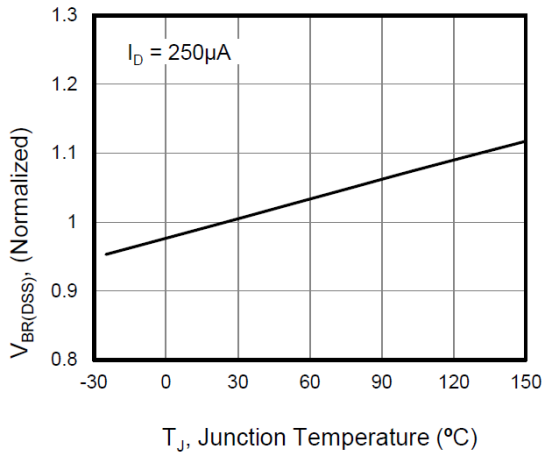


Fig 9 Normalized Breakdown Voltage
vs. Junction Temperature

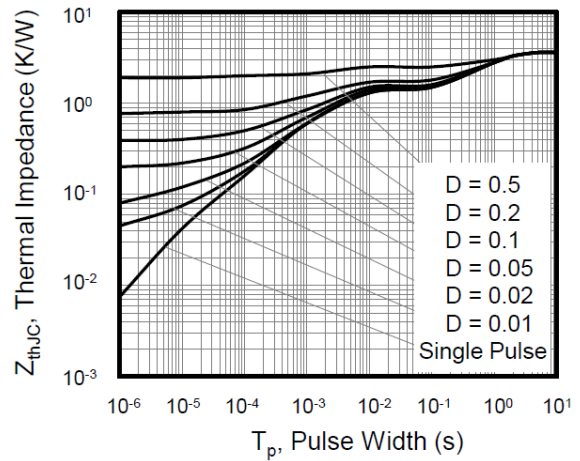


Fig 10 Maximum transient thermal
impedance

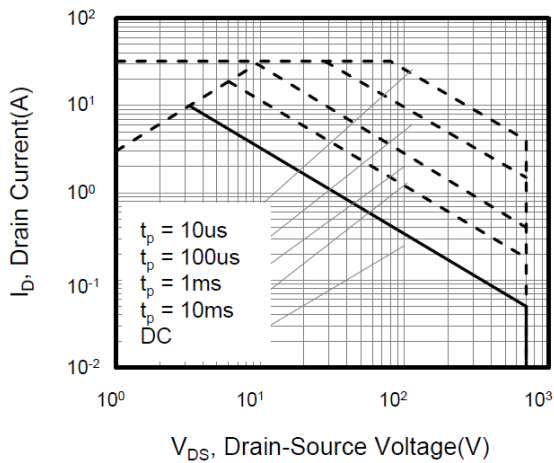
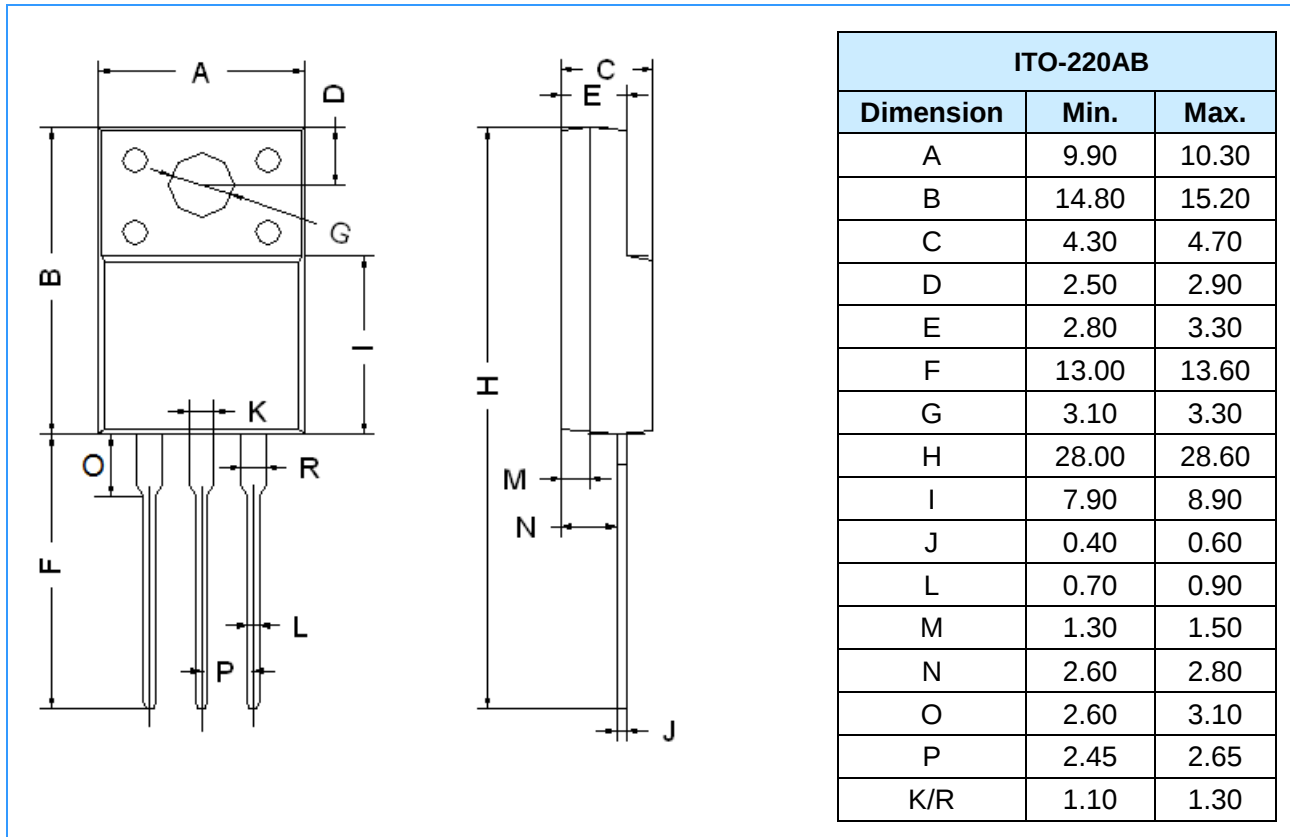


Fig 11 Safe Operation Area

Package Outline Dimensions (Unit: mm)



IMPORTANT NOTICE

Changzhou Galaxy Century Microelectronics (GME) reserves the right to make changes without further notice to any product information (copyrighted) herein to make corrections, modifications, improvements, or other changes. GME does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.