

Features

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

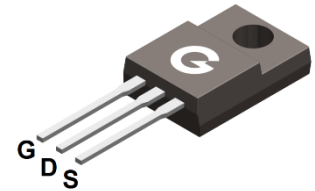
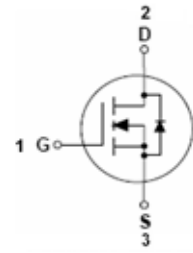
HF

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
SJ90R350F	ITO-220AB	50 pcs / Tube	SJ90R350F

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	900	V
Gate-to-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current	I_D	15	A
Pulsed Drain Current ^{*1}	I_{DM}	45	A
Single Pulse Avalanche Energy ^{*2}	E_{AS}	280	mJ

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	34	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	80	$^\circ\text{C/W}$
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	3.67	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +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	$V_{GS} = 0V, I_D = 250\mu A$	900	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 900V, V_{GS} = 0V, T_J = 25^\circ\text{C}$	-	-	1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS} = \pm 30V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics						
$R_{DS(ON)}$	Static Drain-Source On-resistance ^{*3}	$V_{GS} = 10V, I_D = 7.5A$	-	-	0.365	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.5	-	4.5	V
Dynamic Characteristics						
C_{ISS}	Input Capacitance	$V_{GS} = 0V$	-	2840	-	pF
C_{OSS}	Output Capacitance	$V_{DS} = 50V$	-	220	-	
C_{RSS}	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$	-	16	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD} = 400V$ $R_G = 25\Omega$ $I_D = 15A$	-	49	-	ns
t_r	Turn-on Rise Time		-	42	-	
$t_{d(OFF)}$	Turn-Off Delay Time		-	166	-	
t_f	Turn-Off Fall Time		-	13	-	
Q_G	Total Gate-Charge	$V_{DD} = 400V$	-	62	-	nC
Q_{GS}	Gate to Source Charge	$V_{GS} = 10V$	-	15	-	
Q_{GD}	Gate to Drain (Miller) Charge	$I_D = 15A$	-	23	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	$I_{SD} = 15A, V_{GS} = 0V, T_J = 25^\circ\text{C}$	-	-	1.2	V
I_S	Diode Continuous Forward Current	$T_C = 25^\circ\text{C}$	-	-	15	A
I_{SM}	Pulsed Source-Drain Current		-	-	45	A
t_{rr}	Reverse Recovery Time	$I_S = I_F = 15A, V_R = 400V$	-	680	-	ns
Q_{rr}	Reverse Recovery Charge	$di/dt = 100 A/\mu s$	-	9	-	μC

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. $I_{AS} = 7.5A, V_{DD} = 50V, R_G = 25\Omega, \text{Starting } T_J = 25^\circ\text{C}$
3. Pulse Test: Pulse width $\leq 300\mu s, \text{Duty Cycle} \leq 1\%$

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

Figure 1. Output Characteristics

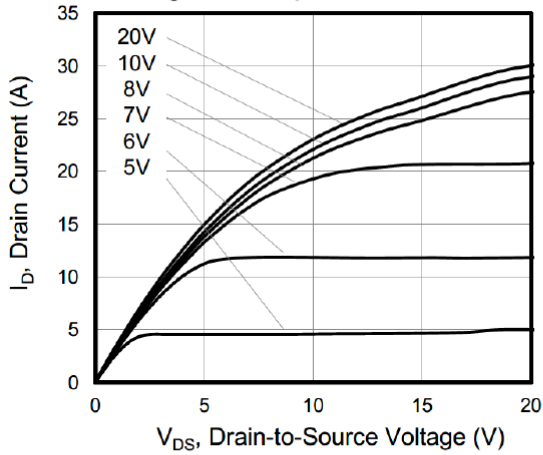


Figure 2. Transfer Characteristics

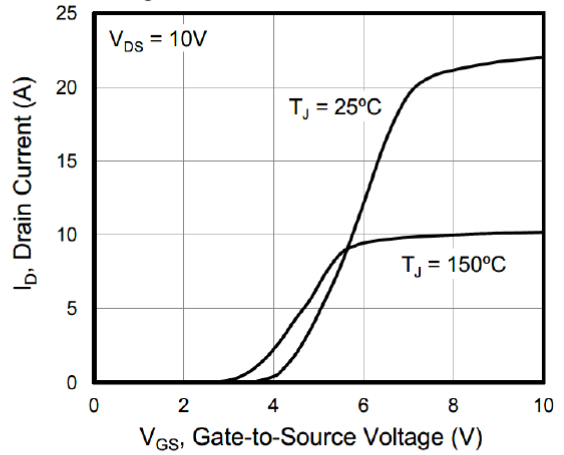


Figure 3. On-Resistance vs. Drain Current

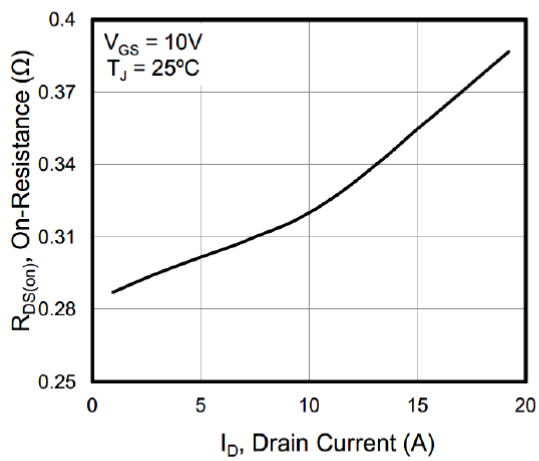


Figure 4. Capacitance

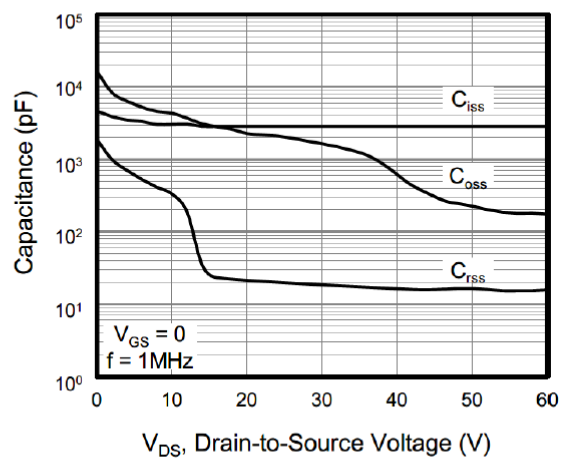


Figure 5. Gate Charge

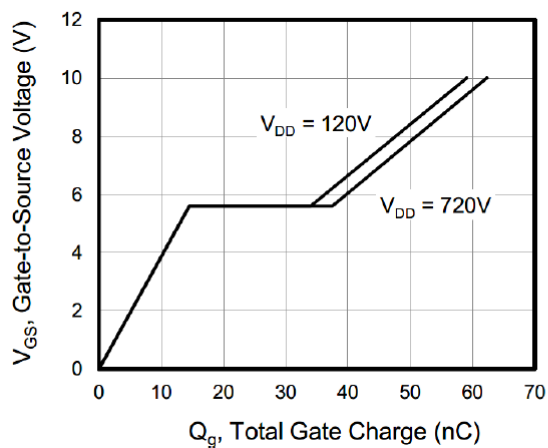


Figure 6. Body Diode Forward Voltage

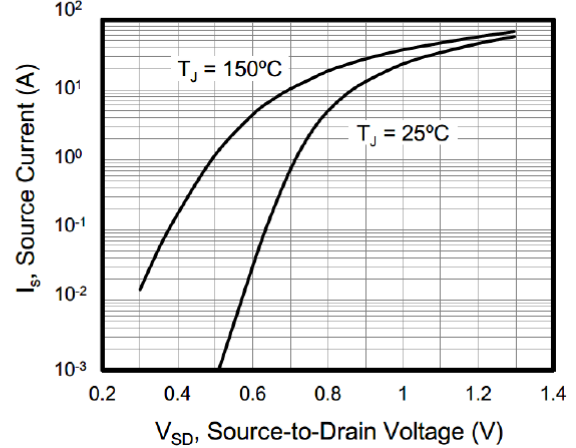


Figure 7. On-Resistance vs. Junction Temperature

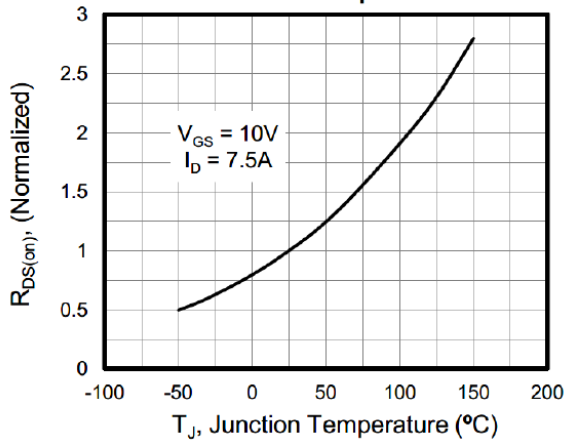


Figure 8. Threshold Voltage vs. Junction Temperature

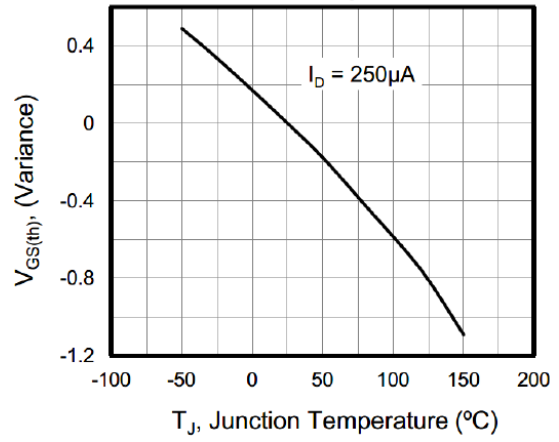
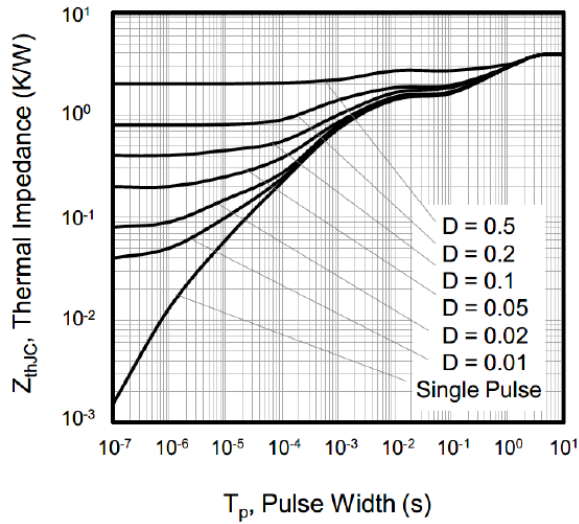
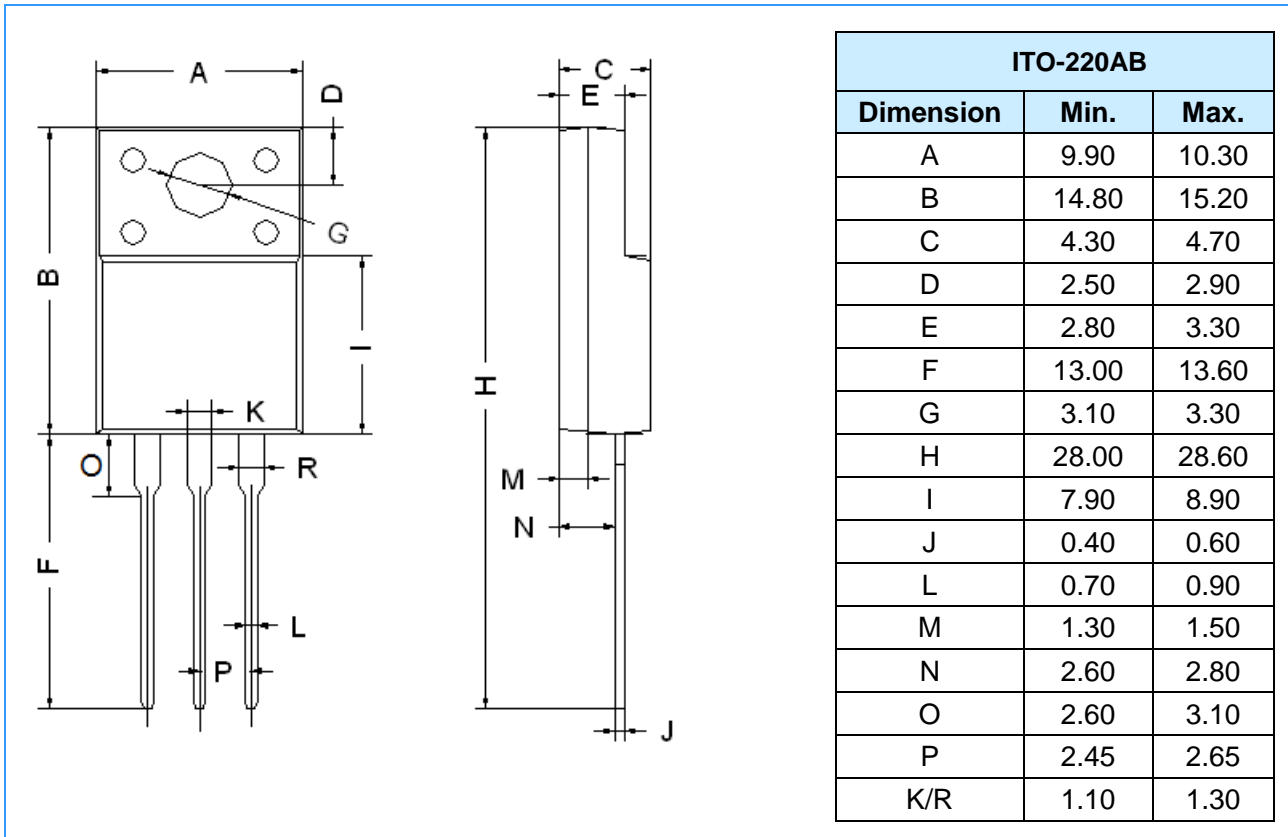


Figure 9. Transient Thermal Impedance



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.