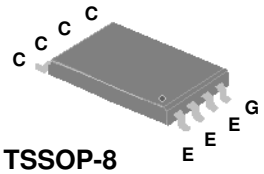
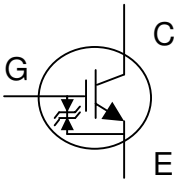
Insulated Gate Bipolar Power Transistor

High Input Impedance
High Peak Current Capability
Low Gate Drive
Strobe Flash Applications
RoHS-compliant, halogen-free package



TSSOP-8

V_{CE}	400V
I_{CP}	150A



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{CE}	Collector-Emitter Voltage	400	V
V_{GEP}	Peak Gate-Emitter Voltage	±6	V
I_{CP}	Pulsed Collector Current	150	A
P_D at T_A=25℃[1]	Maximum Power Dissipation	1	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Junction Temperature Range	-55 to 150	°C

Electrical Specifications at T_j=25℃ (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
I_{GE}	Gate-Emitter Leakage Current	V_{GE}=±6V, V_{CE}=0V	-	-	±10	uA
I_{CES}	Collector-Emitter Leakage Current	V_{CE}=400V, V_{GE}=0V	-	-	10	uA
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	V_{GE}=2.5V, I_{CP}=150A (Pulsed)	-	5.5	9	V
$V_{GE(th)}$	Gate Threshold Voltage	V_{CE}=V_{GE}, I_C=250uA	0.3	-	1.2	V
Q_g	Total Gate Charge	I_C=40A	-	76	130	nC
Q_{ge}	Gate-Emitter Charge	V_{CE}=200V	-	4	-	nC
Q_{gc}	Gate-Collector Charge	V_{GE}=4V	-	26	-	nC
$t_{d(on)}$	Turn-on Delay Time	V_{CC}=320V	-	220	-	ns
t_r	Rise Time	I_C=160A	-	800	-	ns
$t_{d(off)}$	Turn-off Delay Time	R_G=10Ω	-	1.6	-	μs
t_f	Fall Time	V_{GE}=4V	-	1.5	-	μs
C_{ies}	Input Capacitance	V_{GE}=0V	-	4485	8240	pF
C_{oes}	Output Capacitance	V_{CE}=30V	-	44	-	pF
C_{res}	Reverse Transfer Capacitance	f=1.0MHz	-	40	-	pF
Rth_{JA}[1]	Thermal Resistance Junction-Ambient		-	-	125	°C/W

Notes:

1.Surface mounted on 1 in^2 copper pad of FR4 board

Ordering Information

AP28G40GEO-HF-3TR : in RoHS-compliant halogen-free TSSOP-8 shipped on tape and reel (3000 pcs/reel)

Typical Electrical Characteristics

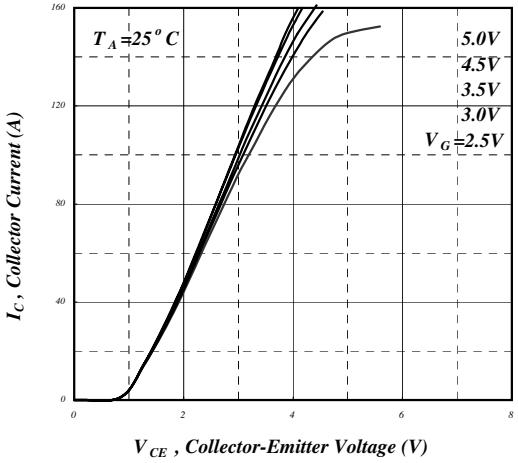


Fig 1. Typical Output Characteristics

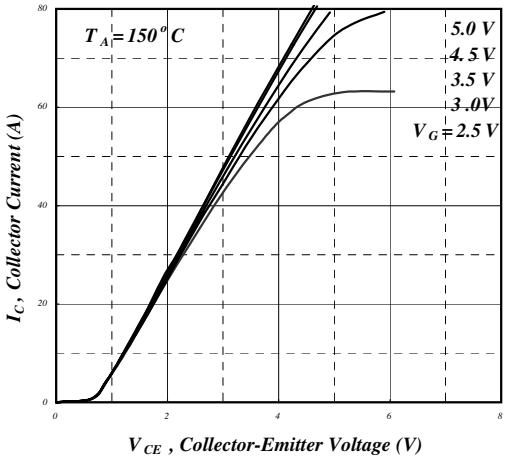


Fig 2. Typical Output Characteristics

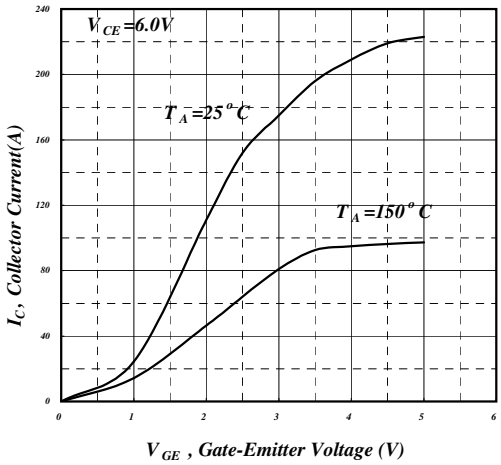


Fig 3. Typical Saturation Voltage Characteristics

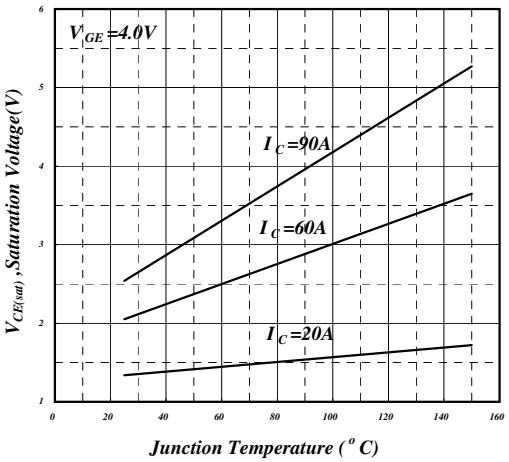


Fig 4. Collector- Emitter Saturation Voltage vs. Junction Temperature

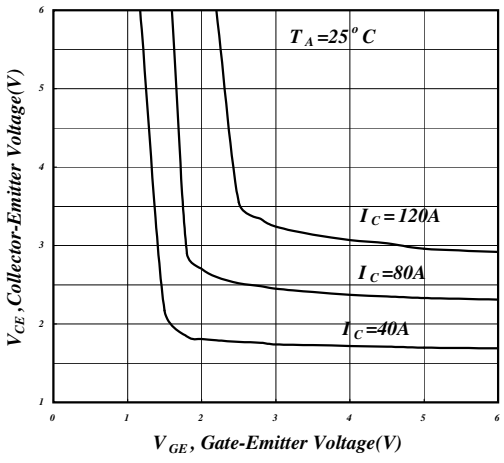


Fig 5. Collector Current vs. Gate-Emitter Voltage

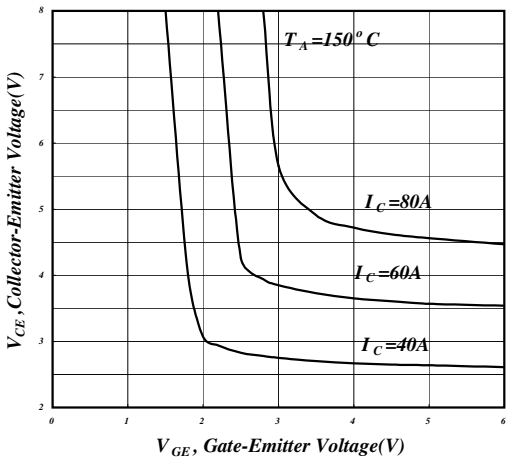


Fig 6. Collector Current vs. Gate-Emitter Voltage

Typical Electrical Characteristics (cont.)

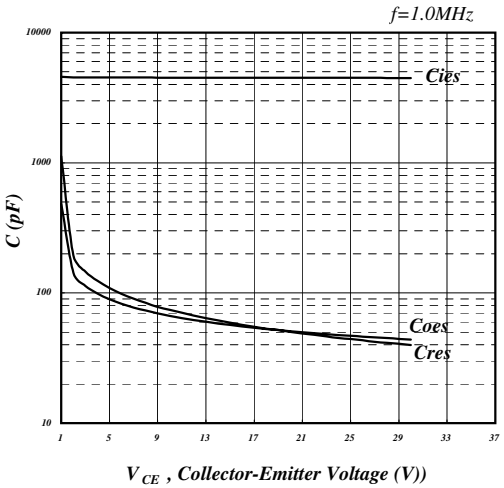


Fig 7. Typical Capacitance Characteristics

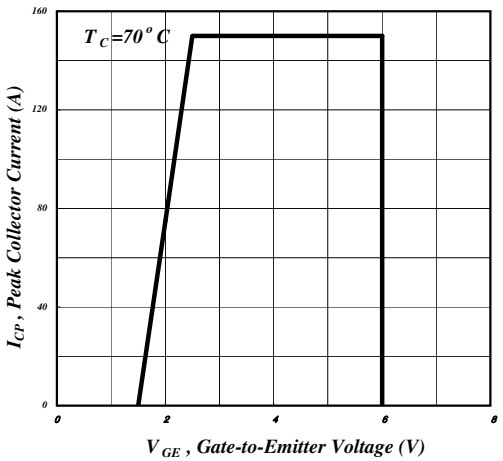


Fig 8. Maximum Pulse Collector Current

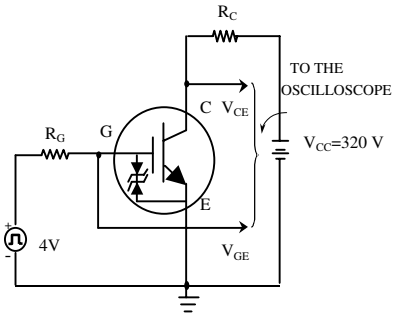


Fig 9. Switching Time Test Circuit

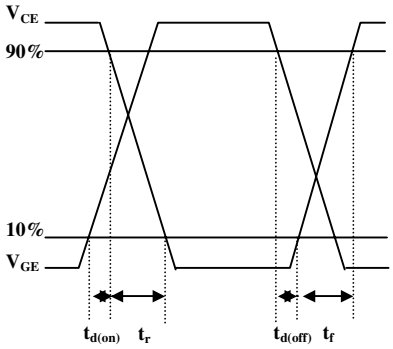


Fig 10. Switching Time Waveform

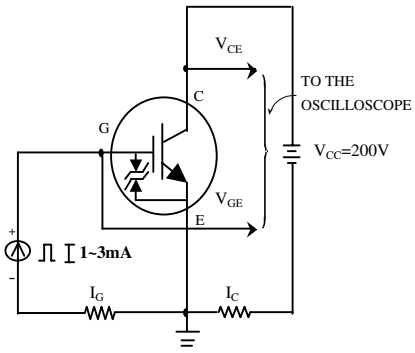


Fig 11. Gate Charge Test Circuit

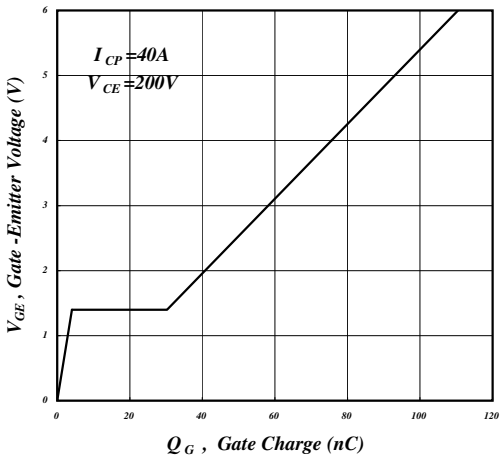
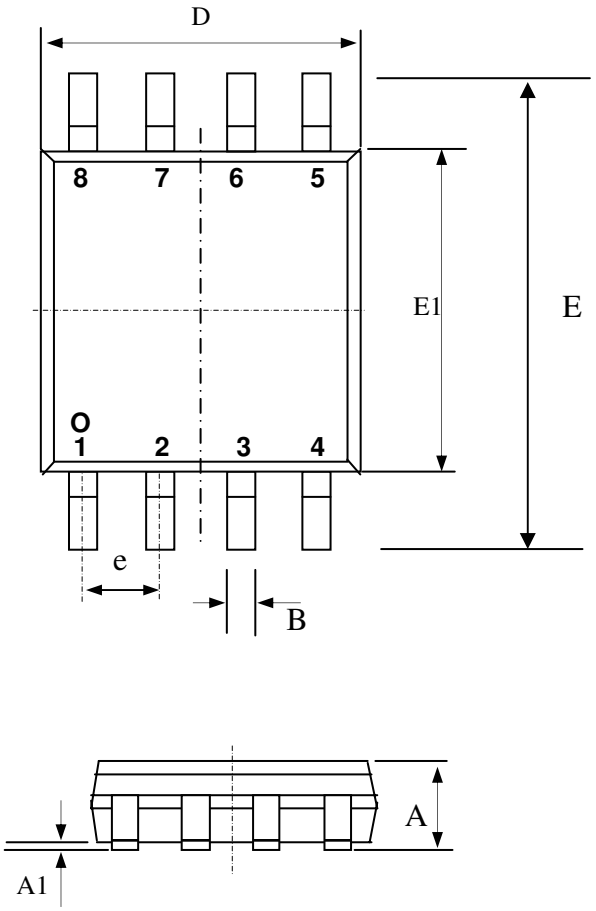
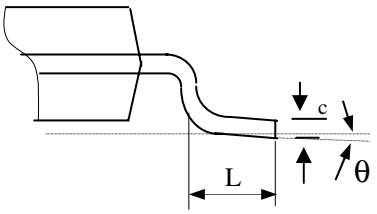


Fig 12. Gate Charge Waveform

Package Dimensions: TSSOP-8

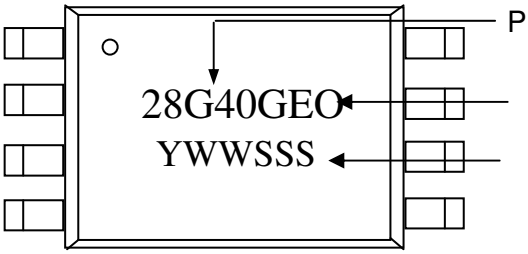


	Millimeters		
SYMBOLS	MIN	NOM	MAX
A	---	---	1.20
A1	0.05	---	0.15
B	0.19	---	0.30
C	---	0.127	----
D	2.90	3.00	3.10
E	6.20	6.40	6.60
E1	4.30	4.40	4.50
L	0.45	0.60	0.75
e	0.65 REF.		
θ	0°	----	8°



1. All dimensions are in millimeters.
2. Dimensions do not include mold protrusions.

Marking Information:



Product: AP28G40

GEO = RoHS-compliant TSSOP-8
with Gate ESD protection

YWWSSS = Date/lot code

YWW = Year and work week of manufacture.
SSS = Lot code information.