

New Jersey Semi-Conductor Products, Inc.

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**GSRU10030
GSRU10035
GSRU10040**

**NPN
300, 350, 400V
10 AMP SWITCHING
t_f — 100ns TYPICAL**

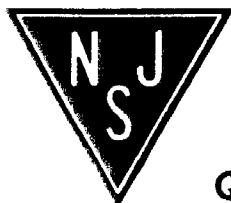
- High Speed
- Rugged
- Cost Effective
- Off-line Power Supplies
- Switching Amplifiers
- Inverters/Converters
- Motor Speed Control Circuits
- Switching Regulators
- Solenoid & Relay Drivers

TO-204AA (TO-3)

MAXIMUM RATINGS (T _C = 25° C unless otherwise noted)					
RATING	SYMBOL	GSRU10030	GSRU10035	GSRU10040	UNIT
Collector-Base Voltage	V _{CB0}	400	450	500	Volts
Collector-Emitter Voltage	V _{CE0}	300	350	400	Volts
Emitter-Base Voltage	V _{EB0}	8.0	8.0	8.0	Volts
Collector Current—Continuous	I _C	15	15	15	Amps
Peak	I _{CM}	20	20	20	Amps
Base Current—Continuous	I _B	5.0	5.0	5.0	Amps
Total Power Dissipation @ T _C = 25° C	P _D	175	175	175	Watts
Junction to Case Thermal Resistance	R _{θJC}	1.0	1.0	1.0	° C/W
Operating and Storage Junction Temperature Range	T _{storage} T _{op}	-65 to +200	-65 to +200	-65 to +200	° C

ELECTRICAL CHARACTERISTICS (T _C = 25° C unless otherwise noted)								
SYMBOL	CONDITIONS	GSRU10030		GSRU10035		GSRU10040		Unit
		Min	Max	Min	Max	Min	Max	
V _{CB0}	I _C = 1mA	400	—	450	—	500	—	Volts
V _{CE0}	I _C = 50mA	300	—	350	—	400	—	Volts
V _{EB0}	I _E = 1mA	8.0	—	8.0	—	8.0	—	Volts
I _{CB0}	V _{CB} = 80% of Rated V _{CB0}	—	500	—	500	—	500	μA
I _{EB0}	V _{EB} = 5V	—	100	—	100	—	100	μA
h _{FE}	V _{CE} = 5V, I _C = 10A†	10	—	10	—	10	—	—
V _{CE(sat)}	I _C = 10A, I _B = 2A†	—	1.0	—	1.0	—	1.0	Volts
V _{BE(sat)}	I _C = 10A, I _B = 2A†	—	1.5	—	1.5	—	1.5	Volts
f _T	V _{CE} = 10V, I _C = 1A, f = 10MHz	20	—	20	—	20	—	MHz
C _{obo}	V _{OB} = 10V, f = 1MHz	—	350	—	350	—	350	pF
SWITCHING		Typ	Max	Typ	Max	Typ	Max	Unit
t _d	Resistive Load V _{CC} = 250V, I _C = 10A R = 25Ω I _{B1} = I _{B2} = 2A V _{BE2} = 6V t _p = 50μs,	0.04	0.07	0.04	0.07	0.04	0.07	μs
t _r		0.10	0.35	0.10	0.35	0.10	0.35	μs
t _s		1.50	2.50	1.50	2.50	1.50	2.50	μs
t _f		0.10	0.30	0.10	0.30	0.10	0.30	μs
t ₂	Inductive Load V _{CC} = 22V, I _C = 10A, L = 100 μH I _{B1} = I _{B2} = 2A, V _{BE2} = 6V V _{CLAMP} = 250V, t _p = 50μs	1.70	2.50	1.70	2.50	1.70	2.50	μs
t _v		0.20	0.35	0.20	0.35	0.20	0.35	μs
t _n		0.05	0.10	0.05	0.10	0.05	0.10	μs
t ₂		0.18	0.40	0.18	0.40	0.18	0.40	μs
t ₂ 100° C		2.00	3.00	2.00	3.00	2.00	3.00	μs
t _{nv} 100° C		0.25	0.40	0.25	0.40	0.25	0.40	μs
t _n 100° C		0.10	0.20	0.10	0.20	0.10	0.20	μs
t ₂ 100° C		0.30	0.60	0.30	0.60	0.30	0.60	μs

† Pulse Conditions: Width = 300μs; Duty Cycle ≤ 2% (measured using Kelvin connections).



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Quality Semi-Conductors

