

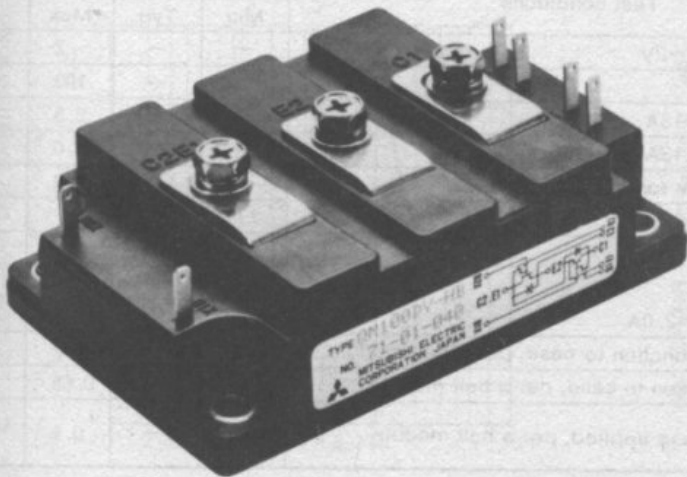
datasheet provided by
www.ineltron.de

MITSUBISHI TRANSISTOR MODULES

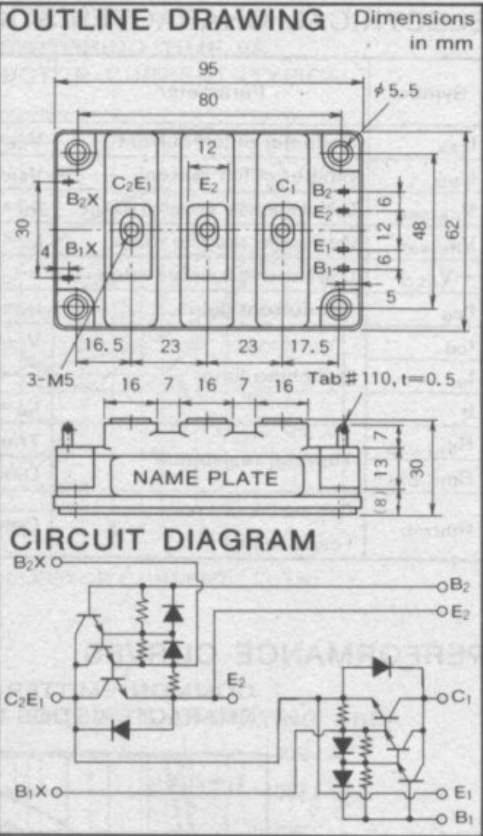
QM100DY-HB

HIGH POWER SWITCHING USE
INSULATED TYPE

QM100DY-HB



- I_C Collector current 100A
- V_{CEX} Collector-emitter voltage 600V
- h_{FE} DC current gain 750
- Insulated type



APPLICATION

AC motor controllers, DC motor controllers, UPS, CVCF,
SMPS,NC equipment, Welders, Inverters

ABSOLUTE MAXIMUM RATINGS (Tj=25°C)

Symbol	Parameter	Conditions	Ratings	Unit
$V_{CEX(SUS)}$	Collector-emitter voltage	$I_C=1A, V_{EB}=2V$	600	V
V_{CEX}	Collector-emitter voltage	$V_{EB}=2V$	600	V
V_{CBO}	Collector-base voltage	Emitter open	600	V
V_{EBO}	Emitter-base voltage	Collector open	7	V
I_C	Collector current	DC	100	A
$-I_C$	Reverse collector current (forward diode current)	DC	100	A
P_C	Collector dissipation	$T_C=25^{\circ}C$	620	W
I_B	Base current	DC	6	A

$-I_{CSM}$	Reverse surge current (forward diode current)	Peak value of one cycle of 60Hz (half wave)	1000	A
T_j	Junction temperature		$-40 \sim +150$	$^{\circ}\text{C}$
T_{stg}	Storage temperature		$-40 \sim +125$	$^{\circ}\text{C}$
V_{isol}	Isolation voltage	AC for 1 minute	2500	V
—	Mounting torque	Main terminals M5 screw/M5 mounting screw	15~20	kg·cm
—	Weight	Typical value	420	g



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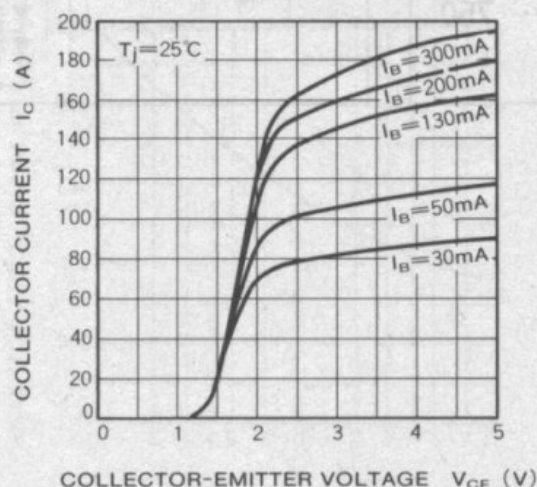
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ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$)

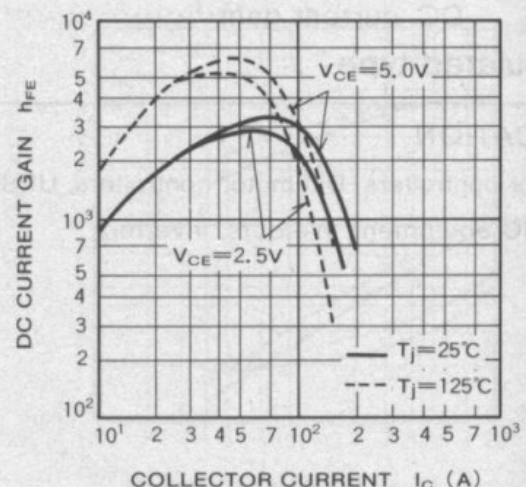
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_{CEX}	Collector cutoff current	$V_{CE}=V_{CEX}, V_{EB}=2\text{V}$	—	—	2	mA
I_{EBO}	Emitter cutoff current	$V_{EB}=7\text{V}$	—	—	100	mA
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=100\text{A}, I_B=0.13\text{A}$	—	—	2.5	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C=100\text{A}, I_B=0.13\text{A}$	—	—	3.0	V
$-V_{CEO}$	Collector-emitter reverse voltage	$-I_C=100\text{A}$ (diode forward voltage drop)	—	—	1.8	V
h_{FE}	DC current gain	$I_C=100\text{A}, V_{CE}=2.5\text{V}$	750	—	—	—
t_{on}	Switching time	$V_{CC}=300\text{V}$	—	—	2.5	μs
t_s		$I_C=100\text{A}$	—	—	10	μs
t_f		$I_{B1}=0.2\text{A}, -I_{B2}=2.0\text{A}$	—	—	2.0	μs
$R_{th(j-c)Q}$	Thermal resistance	Transistor part, junction to case, per a half module	—	—	0.2	$^{\circ}\text{C/W}$
$R_{th(j-c)R}$		Diode part, junction to case, per a half module	—	—	0.65	$^{\circ}\text{C/W}$
$R_{th(c-f)}$	Contact thermal resistance (case to fin)	Conductive grease applied, per a half module	—	—	0.1	$^{\circ}\text{C/W}$

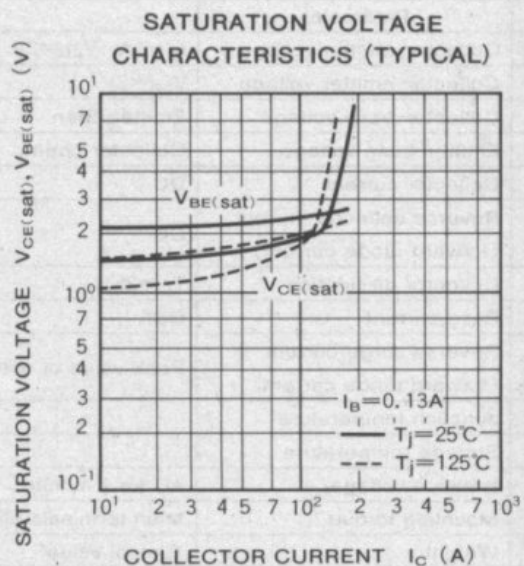
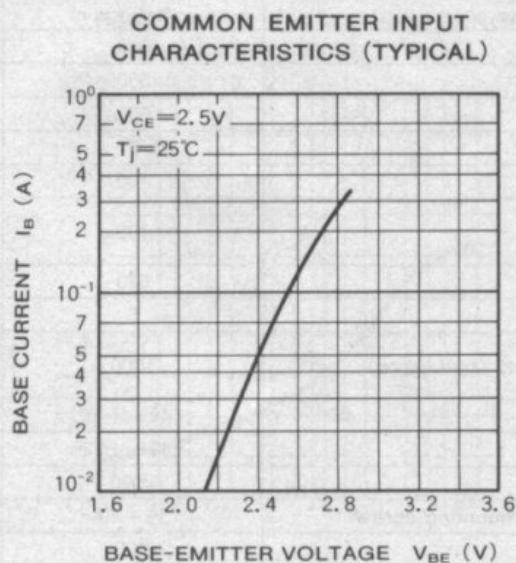
PERFORMANCE CURVES

**COMMON EMITTER OUTPUT
CHARACTERISTICS (TYPICAL)**



**DC CURRENT GAIN VS. COLLECTOR
CURRENT (TYPICAL)**



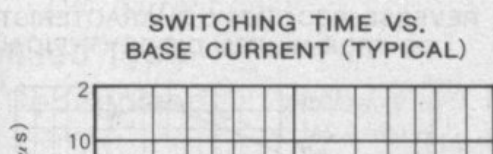
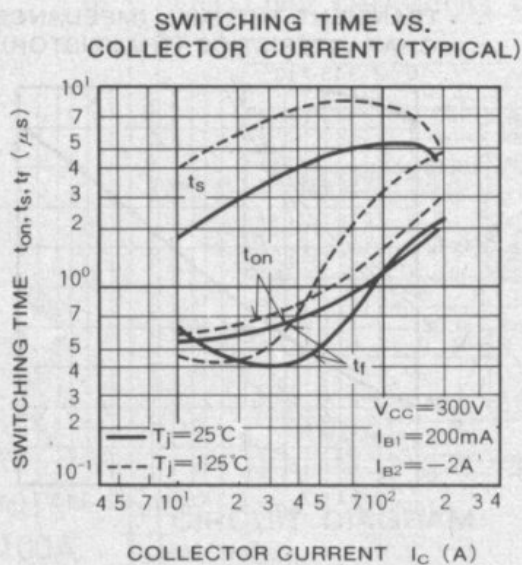
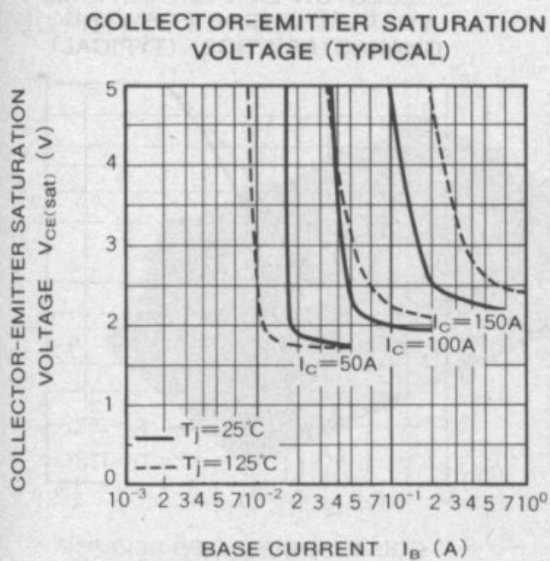


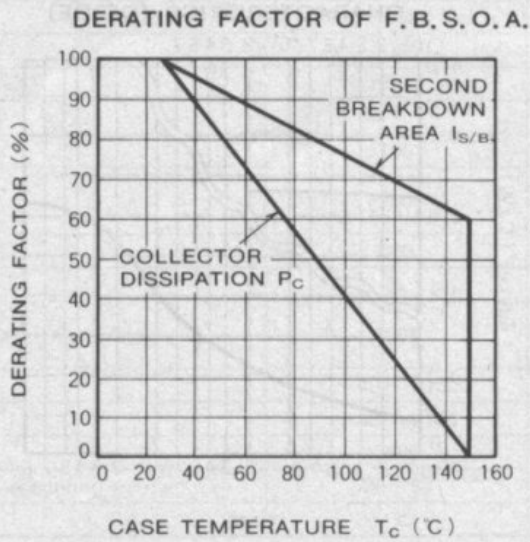
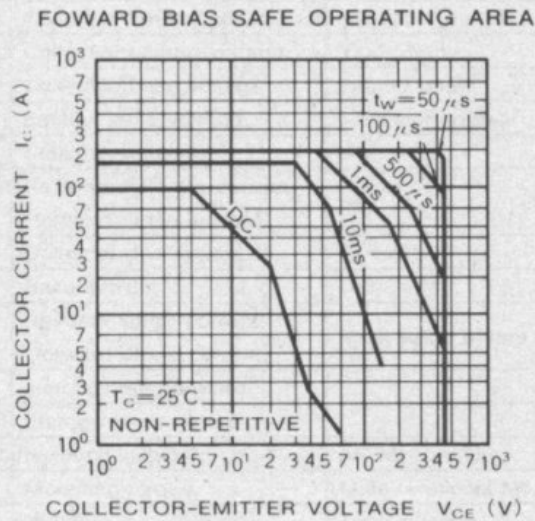
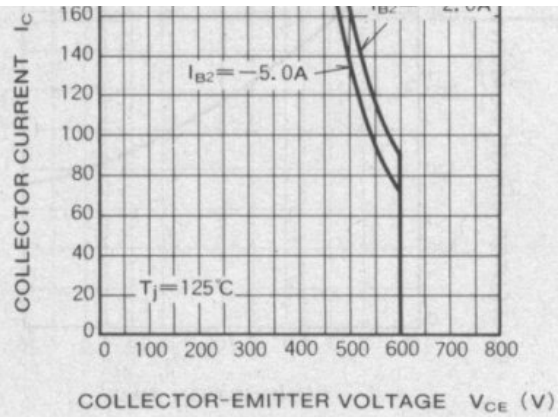
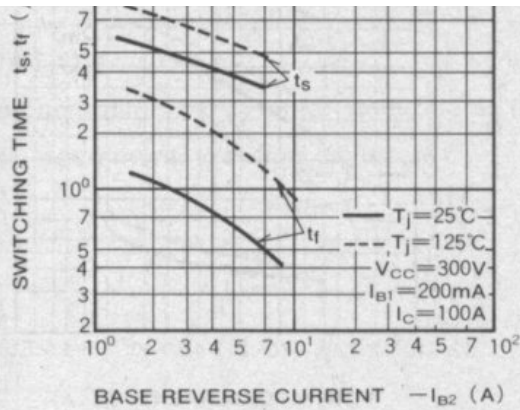
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