

1MBH60-090

富士IGBT

IGBT

INSULATED GATE BIPOLAR TRANSISTOR

■特長：Features

- 高速スイッチング High Speed Switching
- 低飽和電圧 Low Saturation Voltage
- 高入力ゲート抵抗(MOSゲート構造) High Impedance Gate
- 小型パッケージ Small Package

■用途：Applications

- 電圧共振型電源 Voltage Resonance Power Supply
- 誘導加熱 Induction Heater

■定格と特性：Maximum Ratings and Characteristics

●絶対最大定格：Absolute Maximum Ratings($T_c=25^\circ\text{C}$)

| Items | Symbols | Ratings | Units |
|--------------|------------------------------|----------|------------------|
| コレクタ・エミッタ間電圧 | V_{CES} | 900 | V |
| ゲート・エミッタ間電圧 | V_{GES} | ± 20 | V |
| コレクタ電流 | I_C | 60 | A |
| | $I_{C(puls)}(50\mu\text{s})$ | 180 | A |
| コレクタ損失 | P_C | 260 | W |
| 接合部温度 | T_j | +150 | $^\circ\text{C}$ |
| 保存温度 | T_{stg} | -40~+150 | $^\circ\text{C}$ |

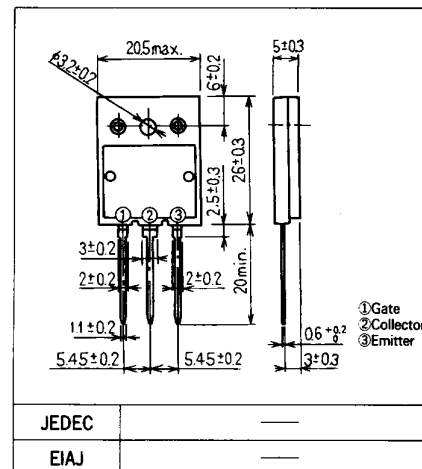
●電気的特性：Electrical Characteristics($T_c=25^\circ\text{C}$)

| Items | Symbols | Test Conditions | Min. | Typ. | Max. | Units |
|----------------|---------------|--|------|------|------|---------------|
| コレクタしゃ断電流 | I_{CES} | $V_{CE}=900\text{V}, V_{GE}=0\text{V}$ | | | 1.0 | mA |
| ゲート漏れ電流 | I_{GES} | $V_{GE}=\pm 20\text{V}, V_{CE}=0\text{V}$ | | | 100 | nA |
| しきい値電圧 | $V_{GE(th)}$ | $I_C=10\text{mA}, V_{CE}=10\text{V}$ | 2.0 | | 6.0 | V |
| コレクタ・エミッタ間飽和電圧 | $V_{CE(sat)}$ | $I_C=60\text{A}, V_{GE}=15\text{V}$ | | | 3.4 | V |
| 入力容量 | C_{ies} | $V_{CE}=25\text{V}, V_{GE}=0\text{V}, f=1\text{MHz}$ | | 2600 | | pF |
| スイッチング特性 | t_r | $V_{CC}=200\text{V}, I_C=60\text{A}, V_{GE}=+15\text{V}$ $R_G=8\Omega, R_L=4.0\Omega$ | | | 1.0 | μs |

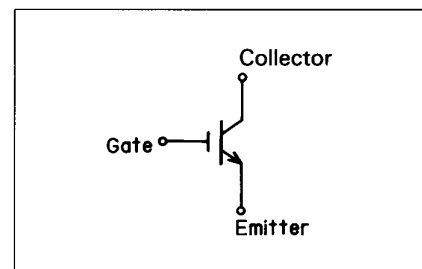
●熱的特性：Thermal Characteristics

| Items | Symbols | Test Conditions | Min. | Typ. | Max. | Units |
|-------|---------------|-----------------|------|------|-------|---------------------------|
| 熱抵抗 | $R_{th(j-c)}$ | | | | 0.481 | $^\circ\text{C}/\text{W}$ |

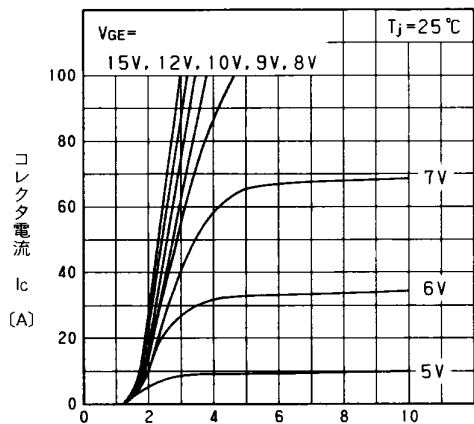
■外形寸法：Outline Drawings



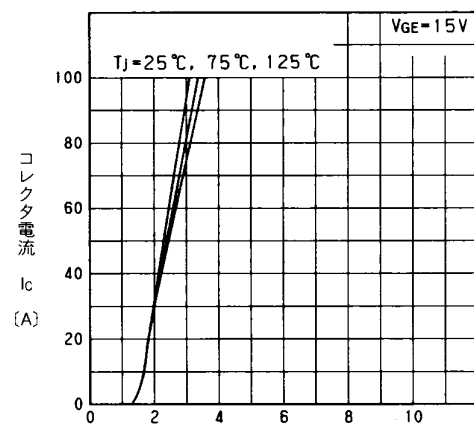
■等価回路：Equivalent Circuit Schematic



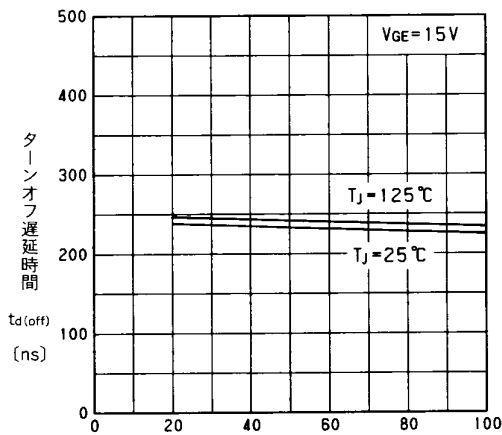
■特性曲線：Characteristics



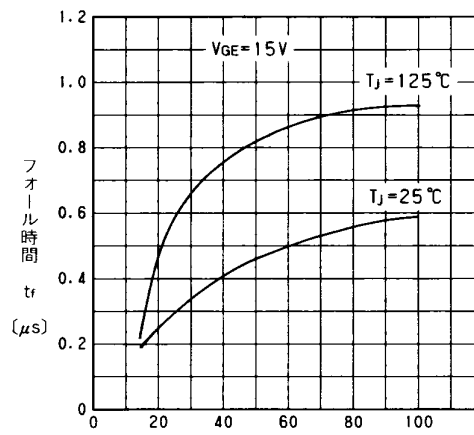
出力特性(標準値)
Typical Output Characteristics



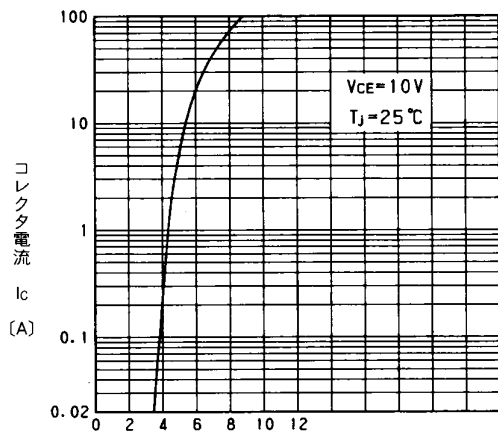
飽和電圧-コレクタ電流特性(標準値)
 $V_{ce(sat)}-I_c$ Characteristics



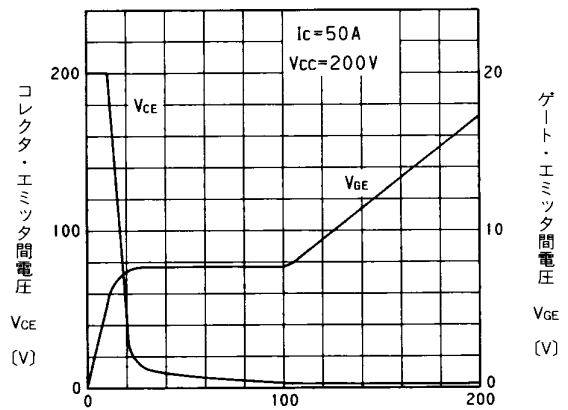
$t_{d(off)}$ -コレクタ電流特性(標準値)
 $t_{d(off)}-I_c$ Characteristics



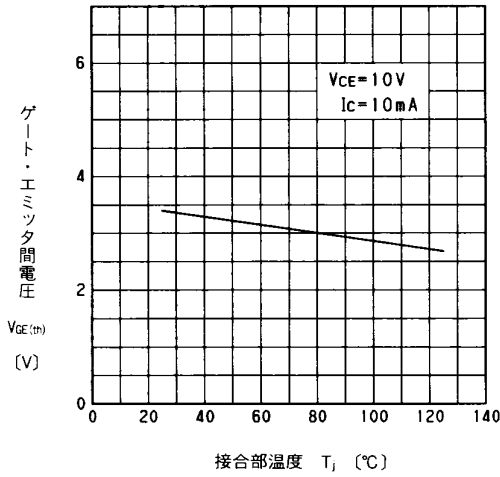
t_r -コレクタ電流特性(標準値)
 t_r-I_c Characteristics



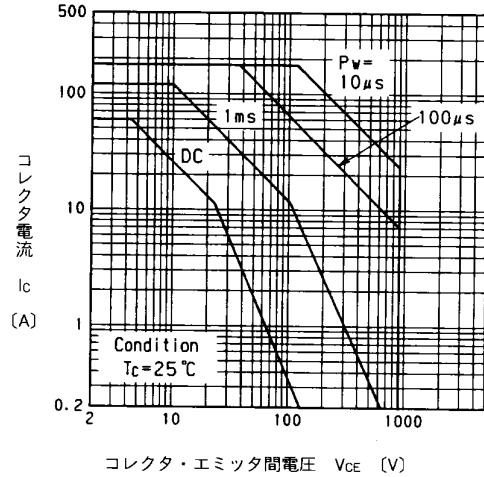
伝達特性(標準値)
Typical Transfer Characteristics



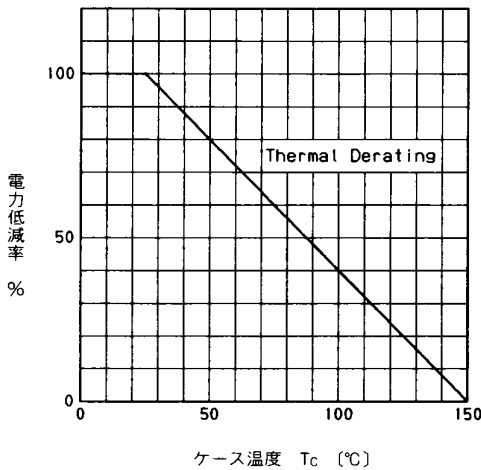
ゲート電荷(標準値)
Dynamic Input Characteristics



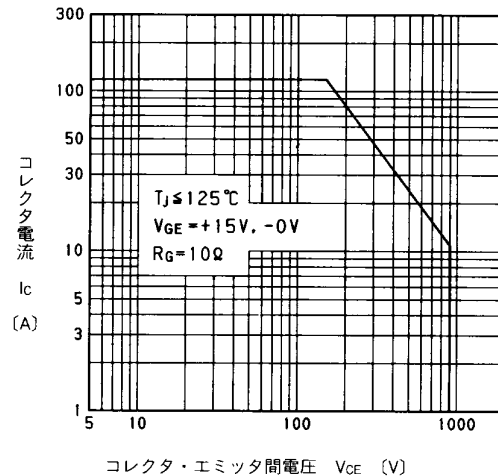
ゲートしきい値電圧—接合部温度特性(標準値)
Gate Threshold Voltage vs Junction Temperature



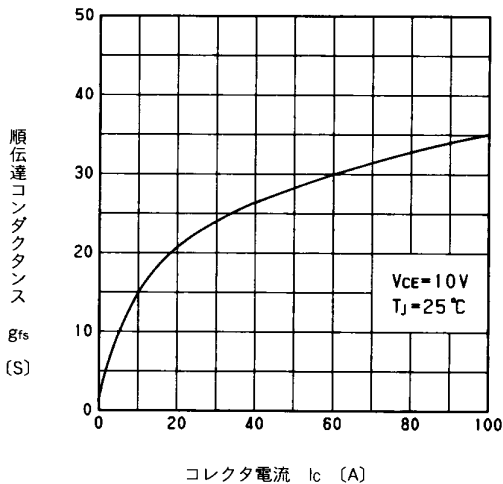
安全動作領域特性
Safe Operating Area



電力低減特性
Pc Derating



安全動作領域(逆バイアス)
Reverse Biased Safe Operating Area



順伝達コンダクタンス—コレクタ電流特性(標準値)
Typical Transconductances

スイッチング特性測定方法

