

59C 02351 D T-03-17
THOMSON-CSF
 DIVISION SEMICONDUCTEURS DISCRETS

RTF 10 → 80
ESM 765.100 → 800

HIGH EFFICIENCY FAST RECOVERY RECTIFIERS
 SUPERSWITCH REDRESSEURS RAPIDES A HAUT RENDEMENT

**HIGH VOLTAGE
 SUPERSWITCH
 RECTIFIER**

FAST RECOVERY RECTIFIERS SUITED FOR APPLICATIONS IN COMBINATION WITH SUPERSWITCH TRANSISTORS

SWITCHMODE POWER SUPPLIES
 MOTOR CONTROLS AND CONVERTERS

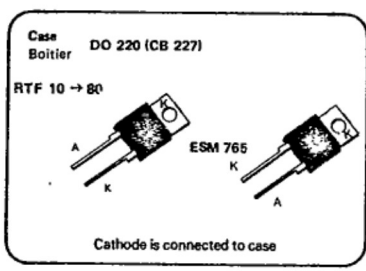
- * High voltage capability: 800 V
- * Fast recovery
- * Soft recovery
- * Specifications and curves enable determination of t_{rr} and I_{RM} at 100°C under users conditions

REDRESSEURS RAPIDES DESTINES A DES APPLICATIONS ASSOCIEES A DES TRANSISTORS SUPERSWITCH.

ALIMENTATIONS A DECOUPE
 COMMANDE DE MOTEURS ET CONVERTISSEURS

- * Possibilités élevées en tension : 800 V
- * Recouvrement rapide
- * Recouvrement progressif
- * Les caractéristiques et les courbes permettent de déterminer t_{rr} et I_{RM} à 100°C dans les conditions des utilisateurs

V_{RRM} 100 → 800 V
 $I_F(AV)$ 10 A @ 100°C
 t_{rr} < 300 ns



ABSOLUTE RATINGS (LIMITING VALUES) VALEURS LIMITEES ABSOLUES D'UTILISATION		RTF 10 ESM 765 100	RTF 20 ESM 765 200	RTF 40 ESM 765 400	RTF 60 ESM 765 600	RTF 80 ESM 765 800	
Repetitive peak reverse voltage <i>Tension inverse de pointe répétitive</i>	V_{RRM}	100	200	400	600	800	V
Non repetitive peak reverse voltage <i>Tension inverse de pointe non répétitive</i>	V_{RSM}	100	200	400	600	800	V
Repetitive peak forward current <i>Courant direct de pointe répétitif</i>	I_{FRM}	120	120	120	120	120	A
	$t_p < 10 \mu s$						
RMS forward current <i>Courant direct efficace</i>	$I_F(RMS)$	16	16	16	16	16	A
Average forward current <i>Courant direct moyen</i>	$I_F(AV)$	10	10	10	10	10	A
	$T_{case} 100^\circ C$ $\delta = 0,5$						
Surge non repetitive forward current <i>Courant direct de pointe de surcharge</i>	I_{FSM}	120	120	120	120	120	A
	$\sin t_p = 10 ms$ $T_{(vj)} = 100^\circ C$						
Power dissipation <i>Dissipation de puissance</i>	P	20	20	20	20	20	W
	$T_{case} 80^\circ C$						
Junction temperature <i>Température de jonction</i>	$T_{(vj)}$	← 40 + 150 →					°C

Junction-case thermal resistance <i>Résistance thermique jonction-boitier</i>	max	$R_{th(j-c)}$	3,5	3,5	3,5	3,5	3,5	°C/W

50, rue Jean-Pierre Timbaud - B.P. 5
 F - 92403 Courbevoie Cedex FRANCE
 Tél.: (1) 788-50-01 Telex : 610560 F



59C 02352 DT-03-17

RTF 10 → 80 - ESM 765-100 → 800

ELECTRICAL CHARACTERISTICS - CARACTERISTIQUES ELECTRIQUES

SYMBOLS	Min	Typ	Max	UNITS	TEST CONDITIONS - CONDITIONS DE MESURE
I_R			20	μA	$T(vj) = 25^\circ C$
			1	mA	$T(vj) = 100^\circ C$
V_F			1,4	V	$T(vj) = 25^\circ C$
			1,35		$T(vj) = 100^\circ C$

$V = V_{RRM}$
 $I_F = 10 A$

RECOVERY CHARACTERISTICS - CARACTERISTIQUES DE RECOUVREMENT**

t_{rr}			300	ns	$I_F = 1 A, di_F/dt = -15 A/\mu s, V_R = 30 V$
Q_{rr}		2,3		μC	$I_F = 10 A, di_F/dt = -50 A/\mu s, V_R = 200 V$

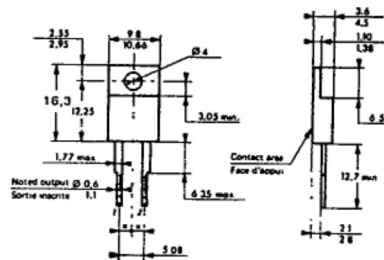
** $T(vj) = 25^\circ C$

To evaluate the power conduction losses use the following equation :

$$V_F = 1,2 + 0,015 I_F$$

CASE OUTLINE

Recommended torque value
Valeur recommandée du
couple de serrage : 80 cm.N



Maximum torque value
Valeur maximale du couple
de serrage : 100 cm.N

Case outline DO 220 (CB 227)

59C 02353 D T-03-17

RTF 10 → 80 - ESM 765-100 → 800

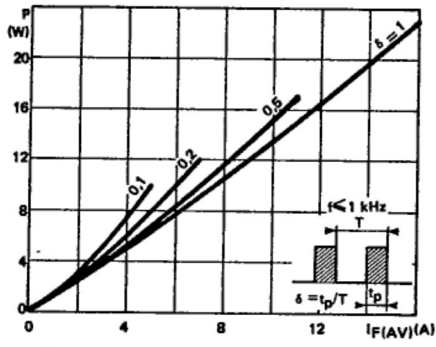


FIGURE 1: Low frequency power losses versus average current

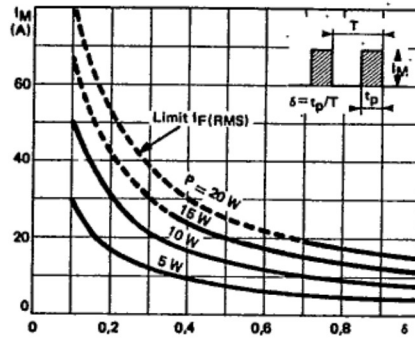


FIGURE 2: Peak current versus form factor

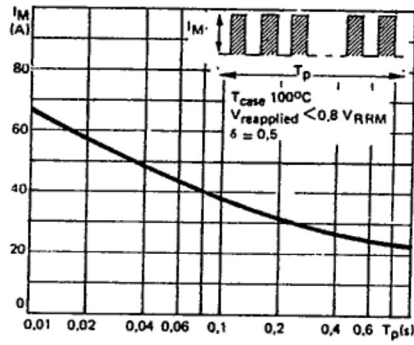


FIGURE 3: Non repetitive peak surge current versus overload duration

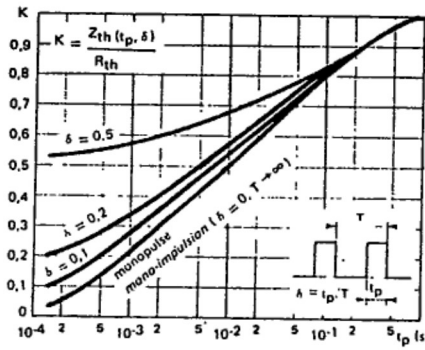


FIGURE 4: Thermal impedance versus pulse width

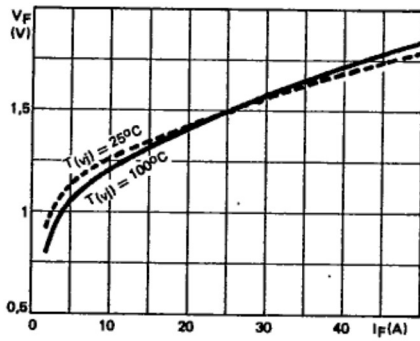


FIGURE 5: Forward voltage drop versus forward current

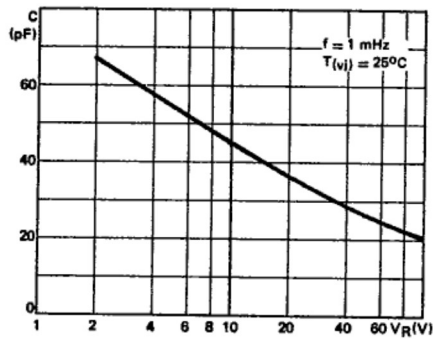


FIGURE 6: Capacitance versus applied reverse voltage

59C 02354 D T-03-17

RTF 10 → 80 - ESM 765-100 → 800

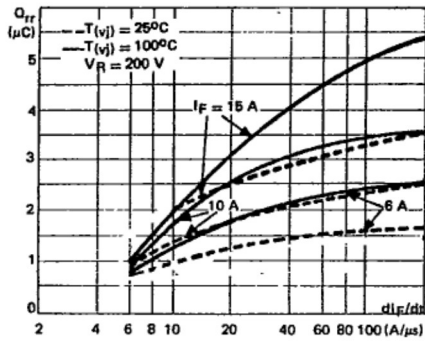


FIGURE 7: Recovery charge versus di_F/dt

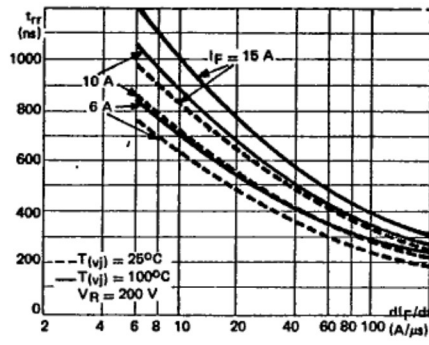


FIGURE 8: Recovery time versus di_F/dt

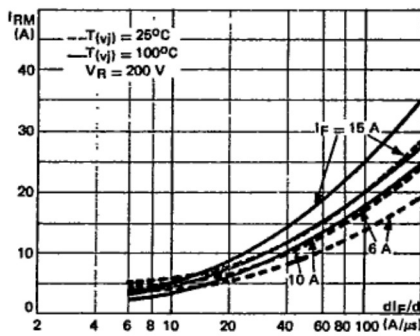
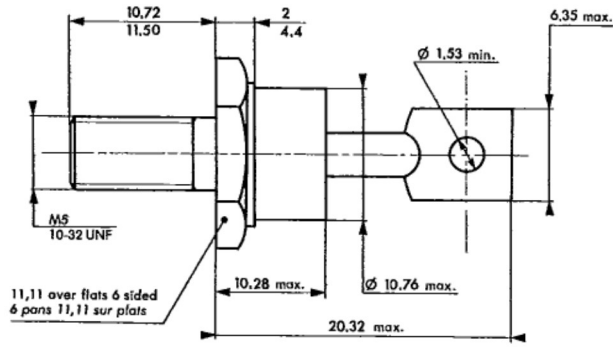


FIGURE 9: Peak reverse current versus di_F/dt

59C 02357 D T-33-01

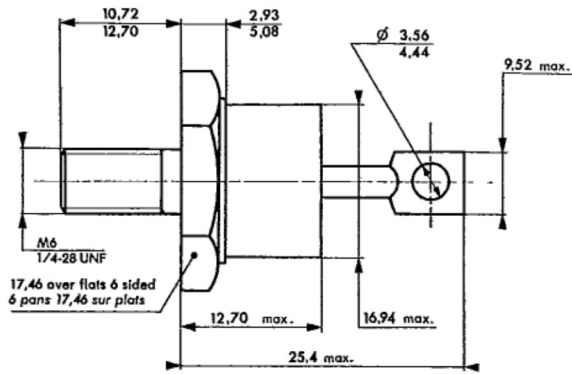
DO 4 (CB-33)

CB-33 M → $\phi W = M 5$
 U → $\phi W = 10-32 \text{ UNF}$

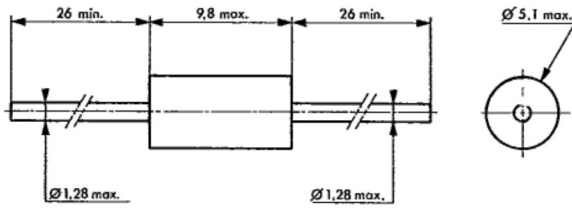


DO 5 (CB-34)

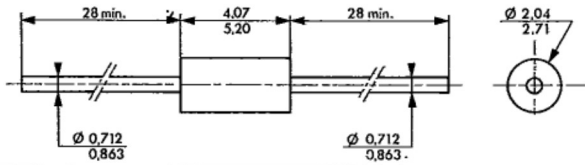
CB-34 M → $\phi W = M 6$
 U → $\phi W = 1/4-28 \text{ UNF}$



DO 27 A (CB-187)

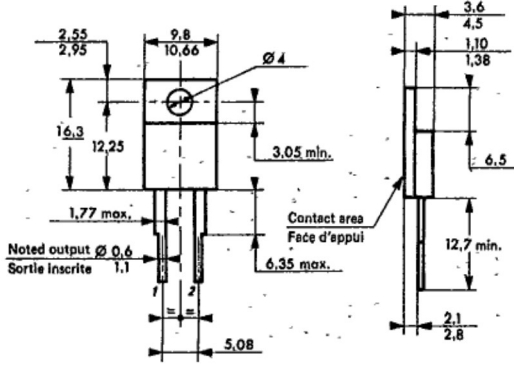


DO 41 (CB-101)

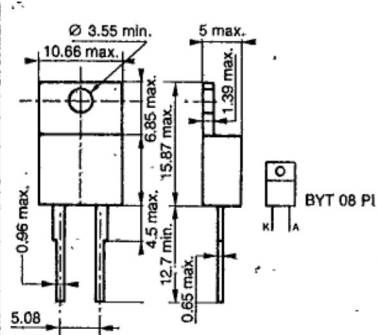


T-33-01

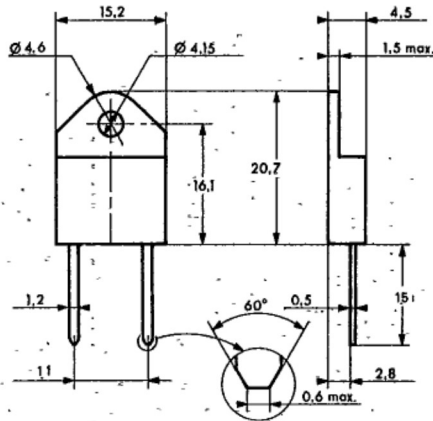
DO 220 AB (CB-227)
uninsulated



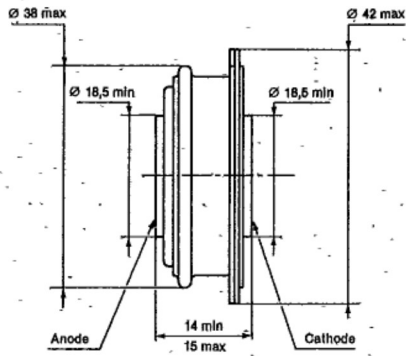
DO 220 AB (CB-426)
insulated



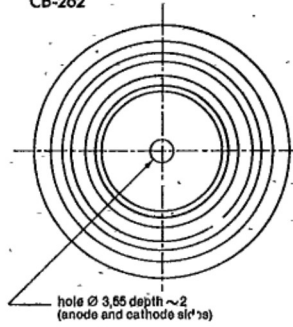
DOP 3 (CB-425)



M 771 (CB-262)

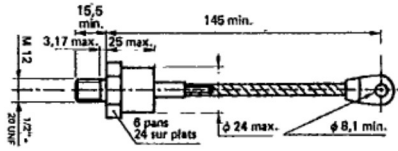


CB-262

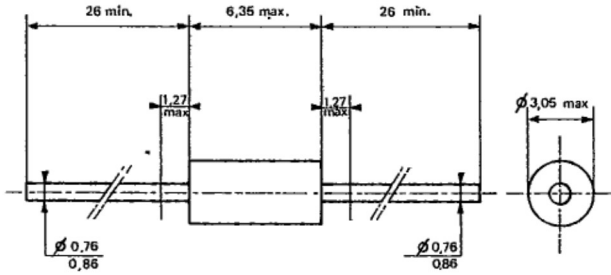


M 771 CASE OUTLINE

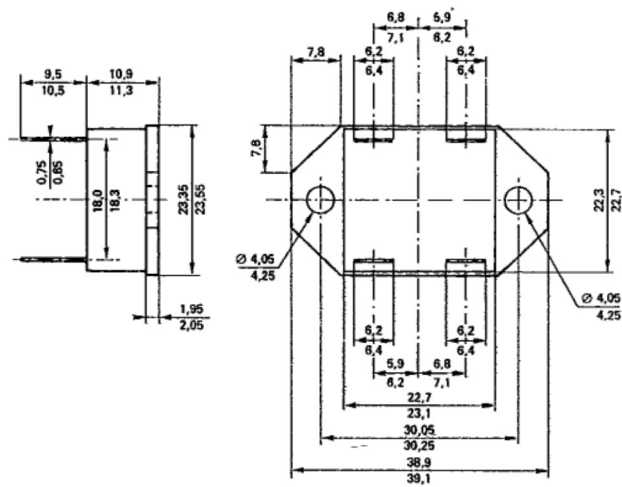
F62 m (CB-252)



F 126 (CB-210)



CB-427

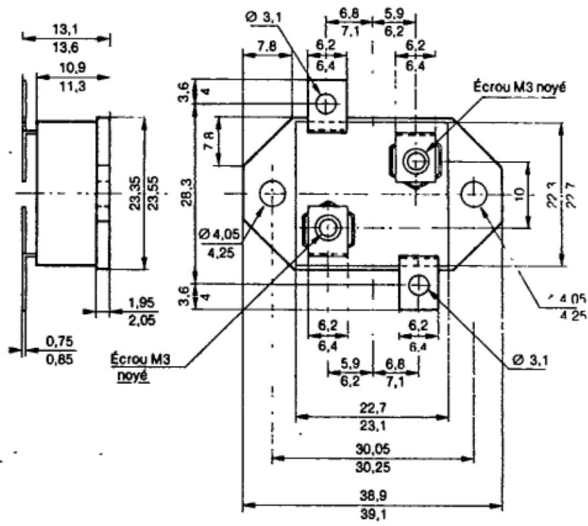


1	2
4	3

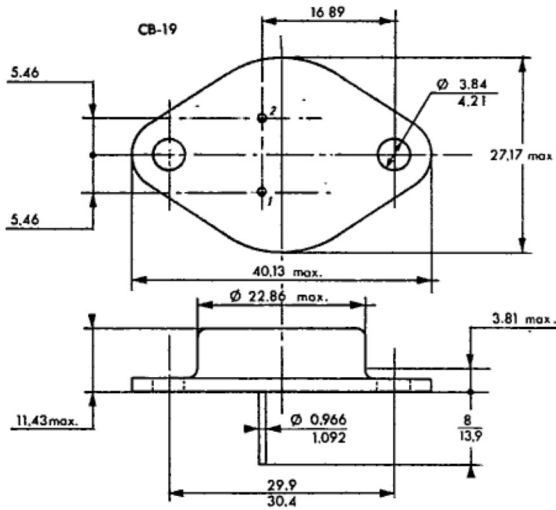
Marking : clair
 Marquage : en clair
 Note : Pin 3 may be omitted
 La broche 3 peut être omise

CB-434

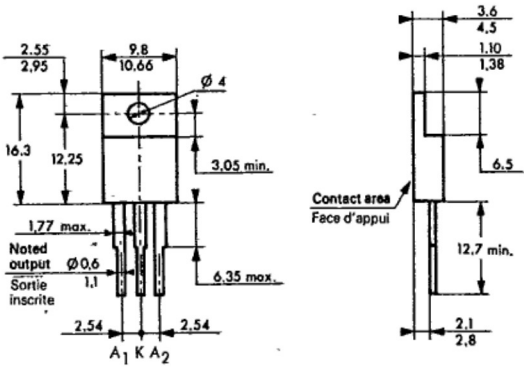
59C 02360 D T-33-01



TO 3 modified (CB-19)



TO 220 AB (CB-428)
for duo-diodes



CB-244 (TOP 3 - TO 218)

