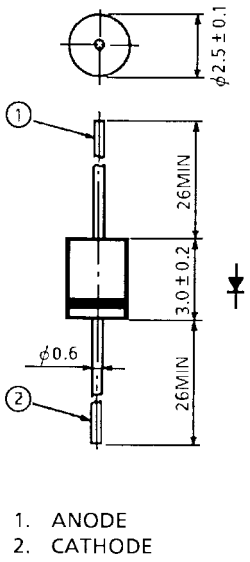
TOSHIBA FAST RECOVERY RECTIFIER SILICON DIFFUSED TYPE

05NH46

SWITCHING MODE POWER SUPPLY APPLICATIONS

- Repetitive Peak Reverse Voltage : V_{RRM} = 1000V
- Average Forward Current : $I_{F\ (AV)}$ = 0.5A
- Very Fast Reverse−Recovery Time : t_{rr} = 200ns (Max)

Unit: mm



1. ANODE
2. CATHODE

JEDEC	—
JEITA	—
TOSHIBA	3−3F2A

Weight: 0.18g

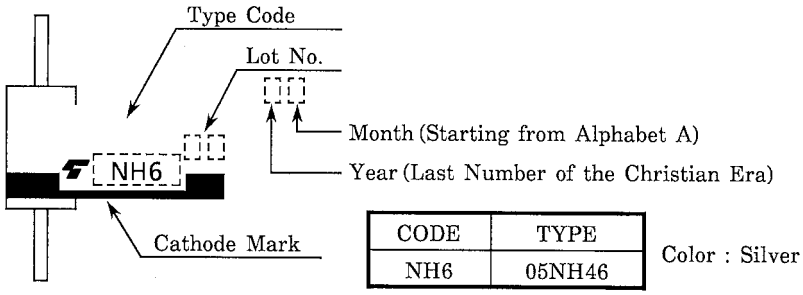
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	1000	V
Average Forward Current (Ta = 25°C)	$I_{F\ (AV)}$	0.5	A
Peak One Cycle Surge Forward Current (Non−Repetitive)	I_{FSM}	15 ($50H_Z$)	A
		17 ($60H_Z$)	
Junction Temperature Range	T_j	−40~150	°C
Storage Temperature Range	T_{stg}	−40~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

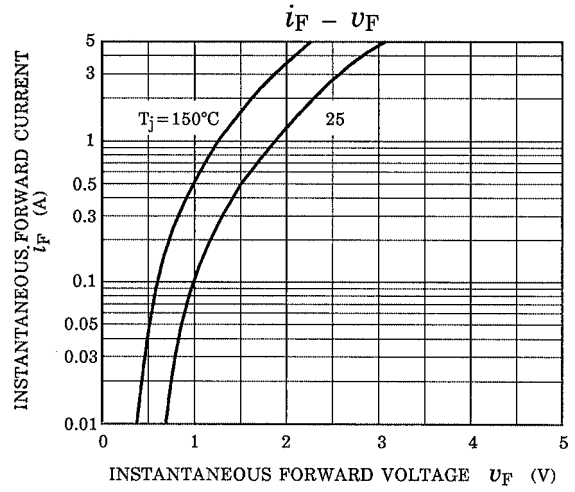
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Peak Forward Voltage	V_{FM}	I_{FM} = 0.5A	—	—	1.5	V
Repetitive Peak Reverse Current	I_{RRM}	V_{RRM} = 1000V	—	—	100	μA
Reverse Recovery Time	t_{rr}	I_F = 1A, di / dt = −30A / μs	—	—	200	ns
Forward Recovery Time	t_{fr}	I_F = 1.0A	—	—	750	ns
Thermal Resistance	$R_{th\ (j-a)}$	Junction to Ambient	—	—	150	°C / W

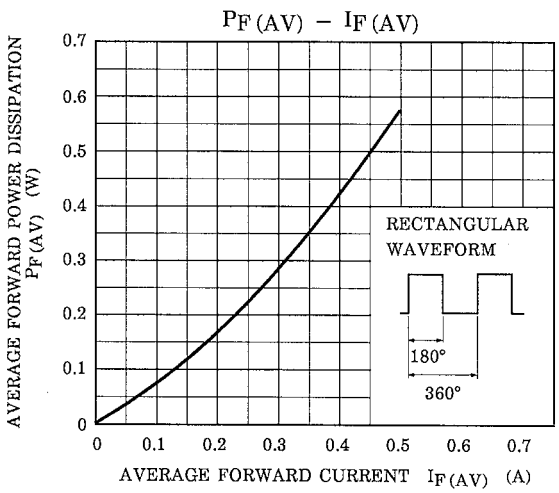
Marking

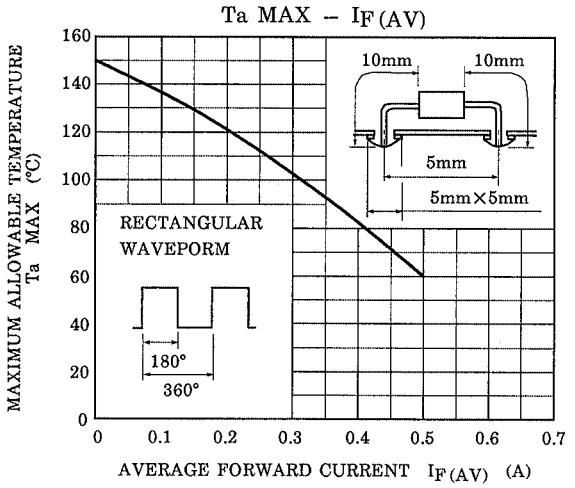


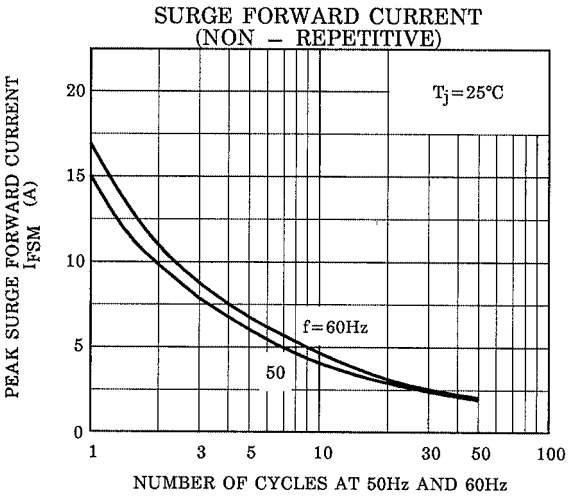
CODE	TYPE
NH6	05NH46

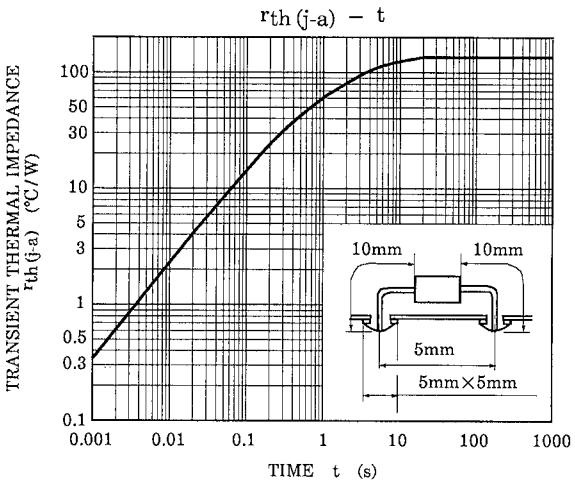
Color : Silver

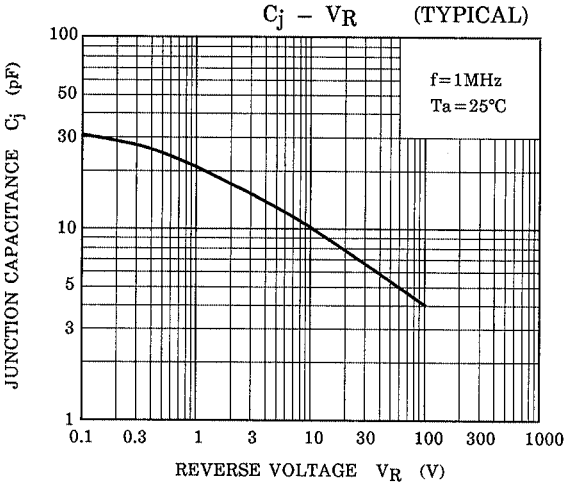

i_F – v_F
INSTANTANEOUS FORWARD CURRENT i_F (A)
T_j=150°C
25
INSTANTANEOUS FORWARD VOLTAGE v_F (V)


$P_{F(AV)}$ – $I_{F(AV)}$
AVERAGE FORWARD POWER DISSIPATION $P_{F(AV)}$ (W)
RECTANGULAR WAVEFORM
180°
360°
AVERAGE FORWARD CURRENT $I_{F(AV)}$ (A)


Ta MAX – $I_{F(AV)}$
MAXIMUM ALLOWABLE TEMPERATURE Ta MAX (°C)
10mm
10mm
5mm
5mm×5mm
RECTANGULAR WAVEPORM
180°
360°
AVERAGE FORWARD CURRENT $I_{F(AV)}$ (A)


SURGE FORWARD CURRENT (NON – REPETITIVE)
PEAK SURGE FORWARD CURRENT I_{FSM} (A)
T_j=25°C
f=60Hz
50
NUMBER OF CYCLES AT 50Hz AND 60Hz


$r_{th(j-a)}$ – t
TRANSIENT THERMAL IMPEDANCE $r_{th(j-a)}$ (°C/W)
10mm
10mm
5mm
5mm×5mm
TIME t (s)


C_j – V_R (TYPICAL)
JUNCTION CAPACITANCE C_j (pF)
f=1MHz
Ta=25°C
REVERSE VOLTAGE V_R (V)

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