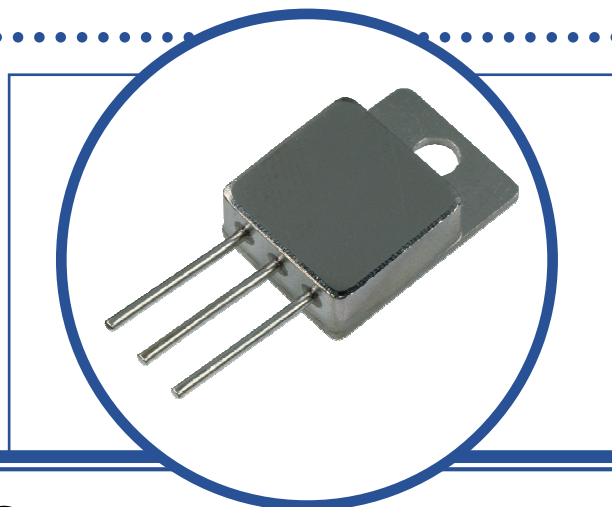


SILICON MULTI-EPITAXIAL NPN TRANSISTOR

2N6678M3A

- High Voltage, Fast Switching.
- Hermetic TO-254AA Isolated Metal Package.
- Ideally suited for PWM Regulators, Power Supplies and Converter Circuits
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage		650V
V_{CEX}	Collector – Emitter Voltage	$V_{BE} = -1.5\text{V}$	650V
V_{CEO}	Collector – Emitter Voltage		400V
V_{EBO}	Emitter – Base Voltage		8V
I_C	Continuous Collector Current		15A
I_B	Base Current		5A
P_D	Total Power Dissipation at	$T_A = 25^\circ\text{C}$	6W
		Derate Above 25°C	34.3mW/ $^\circ\text{C}$
P_D	Total Power Dissipation at	$T_C = 25^\circ\text{C}$	175W
		Derate Above 25°C	1.0W/ $^\circ\text{C}$
T_J	Junction Temperature Range		-65 to +200 $^\circ\text{C}$
T_{stg}	Storage Temperature Range		-65 to +200 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	29.16	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance, Junction To Case	1.0	$^\circ\text{C/W}$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.



SILICON MULTI-EPITAXIAL NPN TRANSISTOR 2N6678M3A

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
V _{(BR)CEO} ⁽¹⁾	Collector-Emitter Breakdown Voltage	I _C = 20mA	400			V
I _{CEX}	Collector Cut-Off Current	V _{CE} = 400V V _{BE} = -1.5V			500	nA
		V _{CE} = 650V V _{BE} = -1.5V T _A = 125°C			1.0	μA
I _{CBO}	Collector Cut-Off Current	V _{CB} = 650V I _E = 0			1.0	mA
I _{EBO}	Emitter Cut-Off Current	V _{EB} = 8V I _C = 0			2	
V _{CE(sat)} ⁽¹⁾	Collector-Emitter Saturation Voltage	I _C = 15A I _B = 3A T _A = 125°C			1.0	V
V _{BE(sat)} ⁽¹⁾	Base-Emitter Saturation Voltage	I _C = 15A I _B = 3A			2	
h _{FE} ⁽¹⁾	Forward-current transfer ratio	I _C = 1.0A V _{CE} = 3V	15		40	
		I _C = 15A V _{CE} = 3V	8		20	
		T _A = -55°C	4			

DYNAMIC CHARACTERISTICS

h _{fe}	Small signal forward-current transfer ratio	I _C = 1.0A V _{CE} = 10V f = 5MHz	3		10	
C _{obo}	Output Capacitance	V _{CB} = 10V I _E = 0 f = 1.0MHz	150		500	pF
t _d	Delay Time	I _C = 15A V _{CC} = 200V I _{B1} = 3A			0.1	μs
t _r	Rise Time				0.6	
t _s	Storage Time	I _C = 15A V _{CC} = 200V I _{B1} = -I _{B2} = 3A			2.5	
t _f	Fall Time				0.5	

Notes

(1) Pulse Width ≤ 300μs, δ ≤ 2%

